



Monday, March 9, 2026

DRAFT COPY

**Beef/Small Ruminant Translational Symposium:
Precision and Innovation in Livestock Systems**

Chair: Thiago Martins, University of Missouri

8:00 AM - 12:00 PM

Ballroom B

8:00 a.m. **Beef/Small Ruminant Translational Symposium Introduction**

8:05 a.m. 300 **Benefits of Precision Management of Calving Day in Beef Heifers**

Robert A. Cushman¹

¹USDA, U.S. Meat Animal Research Center

8:35 a.m. 301 **Balancing Maternal and Terminal Traits in Cow-calf Operations Using Decision Support Platforms**

Matthew L. Spangler¹

¹University of Nebraska

9:05 a.m. 302 **Using Body Size Measures from Computer Vision and AI to Evaluate Influences of Heifer Development on Cow Efficiency**

Derek W. Brake¹

¹University of Missouri

9:35 a.m. 303 **Discovery of Novel Traits to Improve Efficiency and Sustainability of Beef Cattle Production**

Andrew P. Foote¹, Darren E. Hagen¹, David L. Lalman¹

¹Oklahoma State University

10:05 a.m. **Beef/Small Ruminant Translational Symposium Break**

10:20 a.m. 304 **Using Multi-sensor Phenotypes to Support Management and Genetic Selection in Extensive Rangeland Systems**

Andrew S. Hess¹

¹University of Nevada, Reno

10:50 a.m. 305 **Evaluating Virtual Fence Technology to Improve Grazing Management and Cattle Welfare on Western Rangelands**

Juliana Ranches ¹

¹Oregon State University

11:20 a.m. 306 **Characterizing Willow Browse by Cattle and Large Ungulates for Better Riparian Management or Restoration**

Melinda J. Ellison ¹, Jason Karl ¹, Daniel Lauritzen ¹, Hadley Dotts ¹, Joel Yelich ²

¹University of Idaho, ²Merck Animal Health

Billy Day Symposium - Sponsored by Billy Day Appreciation Club

Chair: Timothy Safranski, University of Missouri

8:00 AM - 12:30 PM

Ballroom C

8:00 a.m. **Billy Day Symposium Introduction**

8:05 a.m. 26 **Production-level Impacts of Heat Stress on Swine Reproduction**

Amanda Minton ¹

¹AcuFast Genetics

8:45 a.m. 27 **Long-term and Multigenerational Effects of Heat Stress in Pregnant Sows**

Matthew C. Lucy ¹

¹University of Missouri-Columbia

9:25 a.m. 28 **Invisible Effects of Heat Stress on Swine Reproduction: Biology, Critical Stages, and Solutions**

Jay S. Johnson ¹

¹University of Missouri

10:05 a.m. **Billy Day Symposium Break**

10:20 a.m. 29 **Industry-research Collaboration and Technology Adoption: An International Perspective**

Jeremy J. Cottrell ¹, Frank R. Dunshea ², Charles Rikard-Bell ³

¹University Of Melbourne, ²University of Melbourne, ³Australasian Pork Research Institute Ltd

11:00 a.m. 30 **Dairy/Poultry/Swine Parallels**

Luiz F. Brito ¹

¹Purdue University

11:40 a.m. 299 **Bentley Lecture: Lessons Learned and Remaining Questions: Optimizing Gilt Development for Sow Lifetime Productivity**

Jennifer Patterson ¹

¹University of Alberta

Poster Session 1

8:15 AM - 9:00 AM

Grand Ballroom Pre-Function

8:15 a.m. PS1-1 **Effects of Brewer's Yeast Supplement on Calf Starter and Grower Diets**

Kayla Ripperger ¹, Brandon Koch ²

¹KENT Nutrition, ²Kent Nutrition Group

8:15 a.m. PS1-2 **Effects of a Direct-fed Microbial Supplementation on Feedlot Lamb Growth Performance, Serum Biochemical Markers and Fecal Microbiota**

Kristen E. Kahler ¹, Kelsey Bentley ¹, Payton L. Dahmer ²

¹Kansas State University, ²Kansas State University Department of Animal Sciences & Industry

8:15 a.m. PS1-3 **Effects of Maternal Protein and Energy Supplementation to Beef Heifers During Mid-gestation on Cotyledonary Vascular Development and Proliferation**

Shelby L. Sullivan ¹, Jennifer L. Hurlbert ¹, Brooklyn M. Kuzel ¹, Roberta B. A. Dahlen ¹, Pawel P. borowicz ¹, Virginia P. Montgomery ¹, Keven K. Sedivec ¹, Carl R. Dahlen ¹

¹North Dakota State University

8:15 a.m. PS1-4 **Influence of Maternal High-forage Versus. High-concentrate Diets During Gestation on Offspring's Growth and Metabolic Efficiency in Finishing Steers**

Christy Finck ¹, Pauliane Pucetti ¹, Joel S. Caton ¹, Carl R. Dahlen ¹, Keven K. Sedivec ¹, Samat Amat ¹, Kendall C. Swanson ¹

¹North Dakota State University

8:15 a.m. PS1-5 **Comparison of Analytical Methods for Physically Effective Fiber Estimation in Finishing Beef Cattle Diets**

Mallory E. LeDoux ¹, Andrew P. Foote ¹

¹Oklahoma State University

8:15 a.m. PS1-6 **Quantification of the Nutrients That Wash out of in Situ Bags**

Taylor Lewis ¹, Jessica Miller ¹, Paul J. Kononoff ¹, Jim C. MacDonald ²

¹University of Nebraska, ²Department of Animal Science, University of Nebraska, Lincoln

8:15 a.m. PS1-7 **A Polyphenol Additive Enhances Serum Vitamin E Status and Growth Performance in Nursery Pigs Under Commercial Conditions Including a Mycotoxin Challenge**

Kelly Chen ¹, Tyler Chevalier ², James Jolliff ², Yulin Ma ¹

¹Hanley International LLC, ²Kalmbach Feeds, Inc.

8:15 a.m. PS1-8 **Supplementation with a Novel Phytase Improved Growth Performance, Mineral Digestibility, and Bone Mineralization in Piglets**

Gustavo Cordero ¹, Gemma González-Ortiz ², Laura A. Merriman ³, Jennifer Vazquez ⁴, Boris Villca ⁴, Rosil Lizardo ⁴

¹ABVista, ²AB Vista, ³ABvista, ⁴IRTA Animal Nutrition

8:15 a.m. PS1-10 **Causal Inference Analysis of Full- vs. Half-dose PRRS Vaccination Protocols on Nursery Feed Conversion and Mortality in One Swine Production System**

Luan Gaspat Clemente ¹, Ana Paul Serafini Poeta Silva ¹, Daniel Linhares ¹, Edison Magalhaes ¹

¹Iowa State University

8:15 a.m. PS1-12 **Effects of Microencapsulated Microminerals and Vitamins on Growth Performance and Blood Characteristics of Weanling Pigs**

Su A Lee ¹, Roger G. Campbell ², Ludovic Lahaye ³, Jean Fontaine ⁴, Hans H. Stein ¹

¹University of Illinois, ²RG Campbell Advisory Pty Ltd, ³Jefo Nutrition Inc, ⁴Jefo Nutrition Inc.

8:15 a.m. PS1-13 **Effect of Low Crude Protein formulation Strategies and Pharmacological Zn on the Growth Performance and Fecal Dry Matter of Nursery Pigs Challenged with Enterotoxigenic *Escherichia coli* F18**

Jentry Squires ¹, Payton L. Dahmer ², Jessica Smallfield ¹, Shannon Rossman ³, Samantha A. Swanson ¹, Raghavendra G. Amachawadi ⁴, Joel M. DeRouche ¹, Mike D. Tokach ¹, Katelyn N. Gaffield ¹, Robert D. Goodband ¹, Jason C. Woodworth ¹, Harith Salih ¹, Taghreed S. Mahmood ¹, Sara Viridis ³, Jordan T. Gebhardt ¹

¹Kansas State University, ²Kansas State University Department of Animal Sciences & Industry, ³K-State, ⁴Beef Cattle Institute

8:15 a.m. PS1-14 **Effects of Dietary Crude Protein and Added Zinc on Nursery Pig Growth Performance and Fecal Dry Matter**

Jentry Squires ¹, Payton L. Dahmer ², Robert D. Goodband ¹, Joel M. DeRouche ¹, Julian Arroyave ¹, Katelyn N. Gaffield ¹, Jordan T. Gebhardt ¹, Joana Magoga ¹, Mike D. Tokach ¹, Jason C. Woodworth ¹

¹Kansas State University, ²Kansas State University Department of Animal Sciences & Industry

8:15 a.m. PS1-15 **Comparing Use of UAV Imagery for Cattle Headcounts to Conventional Headcount Practices in a Commercial Feedyard**

Maiya K. Shelor ¹, Logan E. Diller ¹, Haley E. Larson ²

¹Kansas State University, ²Kansas State University Olathe

8:15 a.m. PS1-16 **Apparent total tract digestibility of nutrients and energy of diets with fiber sources for pigs in the initial phase**

Amanda Gorrosterrazú ¹, Hélio Moreira Junior ¹, José A. L. Barbosa ¹, Dener Oliveira Moreira ¹, Carlos Eduardo Martins Bertanha ¹, João Lucca Brito ¹, Samya Stefani Silva Souza ¹, Marcos L. P. L. P. Tsé ², Urbano S. Santos Ruiz ²

¹University of São Paulo, ²São Paulo State University

8:15 a.m. PS1-18 **Effects of Frequency of Asparagopsis spp. supplementation on Methane Production in Beef Steers Fed a Forage-based Diet**

Samuel R. Talley¹, Eric A. Bailey¹, Harley D. Naumann¹, Sophia C. Seibert¹, Emma R. Bauer¹, Derek W. Brake¹

¹University of Missouri

8:15 a.m. PS1-19 **Impact of Altering Maternal Microbiome via High-forage and High-concentrate Diets During Pregnancy on Offspring Gut Microbiome Development in Beef Cattle**

Godson Aryee¹, Devin B. Holman², Kell Helmuth¹, Justine Kilama¹, Jennifer L. Hurlbert¹, Brooklyn M. Kuzel¹, Sarah Underdahl¹, Joel S. Caton¹, Kendall C. Swanson¹, Carl R. Dahlen¹, Samat Amat¹

¹North Dakota State University, ²Lacombe Research and Development Centre

Graduate Student Oral Competition PHD - Sponsored by the Gretchen Hill Appreciation Club

8:15 AM - 11:45 AM

210/211/212

8:15 a.m. 12 **Performance and Economic Viability of DDGS Diets in Growing-finishing Pigs**

Stephane A B da Motta¹, Rhuan F. Chaves², Rasiel Restelatto³, Vinícius S. Cantarelli¹

¹UFLA, ²Animalnutri, ³INPASA

8:30 a.m. 13 **Standardized Ileal Digestibility of Crude Protein and Amino Acids in Corn, White Sorghum, and Red Sorghum Fed to Growing Pigs**

Walter G. Friesen¹, Diego A. Lopez¹, Jason C. Woodworth², Jordan T. Gebhardt², Matt D. Miesner², Chad B. Paulk²

¹KANSAS STATE UNIVERSITY, ²Kansas State University

8:45 a.m. 14 **Feedlot Performance and Carcass Traits of Simangus Steers, Simangus × Holstein Steers and Heifers, and Holstein Steers**

Melanie Pimentel-Concepción¹, Daniel Buskirk¹, Jerad Jaborek², Andrea J. Garmyn¹, Jeaninne P. Schwehofer²

¹Michigan State University, ²Michigan State University Extension

9:00 a.m. 15 **Leveraging Machine Learning to Predict Subsequent Farrowing Success: A Decision Support Tool for Sow Management**

Elly Kirwa¹, Beau Peterson², Caleb J. Grohmann², Rafael R. da Rosa Ulguim¹, Gustavo Silva³

¹IOWA STATE UNIVERSITY, ²Carthage Innovative Swine Solutions, LLC, ³Iowa State University

9:15 a.m. 16 **Integration of Gut Microbiome and Dietary Chemical Composition Improves Digestible Energy Prediction in High-fiber Swine Diets**

Sudario Roberto Silva Junior¹, Andres Gomez¹, Pedro E. Urriola²

¹University of Minnesota, ²University of Minnesota, Department of Animal Science

9:30 a.m. 17 **Effects of Increasing Levels of Galacto-oligosaccharides or 2'-fucosyllactose on Intestinal Health of Nursery Pigs Fed Diets Including Bovine Milk Co-products**

Alexa R. Gormley¹, Jung Yeol Sung¹, Sung Woo Kim¹

¹NC State University

9:45 a.m. 18 **Graduate Student Oral Competition PHD Break**

10:00 a.m. 19 **Is Caloric Efficiency an Accurate Method to Estimate Soybean Meal Net Energy in Nursery Pigs?**

Ty Kim¹, Pau Salgado-Lopez¹, Jessica Smallfield¹, Mike D. Tokach¹, Joel M. DeRouchey¹, Jason C. Woodworth¹, Robert D. Goodband¹, Katelyn N. Gaffield¹, Jordan T. Gebhardt¹, Henrique S. Cemin², Ernie L. Hansen², Morgan Hart², Jamil E. G. Faccin², Jose A. Soto²

¹Kansas State University, ²Alltech

10:15 a.m. 20 **Effects of Short Chain Fatty Acids Derivatives on the Ileal Digestibility of Amino Acids in Weanling Pigs Challenged with F4 and F18 Enterotoxigenic *Escherichia coli***

Shuhan Sun¹, Sangwoo Park¹, Yating Zhao¹, Youngmin Park¹, Supatirada Wongchanla¹, Xunde Li¹, Peng Ji¹, Yanhong Liu¹

¹University of California, Davis

10:30 a.m. 21 **Effects of 25-hydroxyvitamin d₃ Supplementation in Late Gestation and Lactation Diets on Reproductive and Litter Performance and Antioxidant Capacity in Sows and Their Progeny**

Chan Ho Kwon¹, Jannell A. Torres¹, Eva S. Safaie¹, Ji Hye Lee¹, Zhaohui Yang², Pengcheng Xue², Xi Chen², Young Dal Jang¹

¹University of Georgia, ²Nutribins LLC

10:45 a.m. 22 **Management Strategy Post-breeding Through First Trimester Alters Artificial Insemination Conception Rates and Offspring Growth Through Weaning in Crossbred Beef Heifers**

Kathlyn M. Hauxwell¹, Joel S. Caton², Taylor N. Andrews³, George A. Perry³, Alexandria P. Snider⁴, Robert A. Cushman⁴

¹North Dakota State University, ²North Dakota State University, ³Texas A&M Agrilife Research & Extension Center, ⁴USDA, U.S. Meat Animal Research Center

11:00 a.m. 23 **Comprehensive Analysis of Intestinal, Hormonal, Behavioral, and Metabolic Responses in Post-weaning Pigs Fed Control or High-fiber Diets**

Caitlyn R. Sullivan¹, MaryKate Harrod Byrd², Shelby L. Diggs¹, L. Kirsten Senn³, Mekenzie R. Cecil³, Devendra Sarnaik³, Brian T. Richert³, Wayne W. Campbell³, Tzu-Wen L. Cross³, Rahim Rahimi³, Amy L. Petry¹, Jay S. Johnson¹

¹University of Missouri, ²University of Kentucky, ³Purdue University

11:15 a.m. 24 **Effects of High Soybean Meal Inclusion on the Gut Microbiome of Finishing Pigs**

Angel M. Martinez¹, Courtney Pohlen¹, Rafe Royall¹, Eric M. Weaver¹, Benoit St-Pierre¹
¹South Dakota State University

11:30 a.m. 25 **Supplementation of Nucleotides and Branched Chain Amino Acids in the Diets of Weaned Pigs Fed Low Protein Diets and Its Effects on Intestinal Morphology, Inflammatory Markers, and Colonic Microbiota**

Abiola S. Lawal¹, Olumide S. Olowe¹, Olayiwola Adeola¹, Kolapo M. Ajuwon¹
¹Purdue University

Nonruminant Nutrition II: Nursery Pig Nutrition I

Chair: Kayla Miller, The Maschhoffs, LLC

8:30 AM - 11:45 AM

Ballroom A

8:30 a.m. 31 **Effects of Increasing Dietary Lipid Inclusion in Nursery Diets with or Without Sucrose on the Growth Performance of Weaned Pigs**

Nathan Vander Werff¹, Nicholas K. Gabler², David S. Rosero¹
¹Iowa State University, ²Department of Animal Science, Iowa State University

8:45 a.m. 32 **Effect of Nursery Lactose Concentration and Feeding Duration on Subsequent Growth Performance, Fecal Dry Matter, and Fecal Scores in PIC 800-sired Wean-to-finish Pigs**

Julian Arroyave¹, Mike D. Tokach¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Katelyn N. Gaffield¹, Robert D. Goodband¹, Jordan T. Gebhardt¹, Carine M. Vier², Weasley A. Orlando³, Matthew Spindler², Luis E. Zaragoza², Haley Schwecke⁴, Julia Holen⁴
¹Kansas State University, ²PIC, ³Genus PIC, ⁴Swine Vet Center

9:00 a.m. 33 **Comparative Effects of Two Bacillus-based Direct-fed Microbial Products on Nursery Pig Growth Performance**

Michelle N. McCallum¹, Christopher L. Puls¹, Joel D. Spencer¹, Adrienne Woodward¹, Elizabeth Galbraith², Josie Archibald¹
¹United Animal Health, ²Microbial Discovery Group

9:15 a.m. 34 **Effect of Nursery Phase Feeding Budget on Growth Performance and Economics in Nursery Pigs Raised Under Commercial Conditions**

Julian Arroyave¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Mike D. Tokach¹, Jordan T. Gebhardt¹, Robert D. Goodband¹, Katelyn N. Gaffield¹, Jorge Estrada², Eric Parr², Matt Frizzo²
¹Kansas State University, ²Carthage Innovative Swine Solutions, LLC

9:30 a.m. 35 **The Effects of a Step-down In-feed Acidification Strategy on Nursery Pig Growth Performance and Survival**

Morgan Hart¹, Sharlie A. Hansen¹, Ernie L. Hansen¹, Henrique S. Cemin¹, Jamil E. G. Faccin¹, Jose A. Soto¹

¹Alltech

9:45 a.m. 36 **Determining the Dose-response Effects of a Modified Corn Protein Product on Growth Performance and Fecal Dry Matter in Nursery Pig Diets**

Jacob Knoy¹, Paula Giacomini¹, Jason C. Woodworth¹, Katelyn N. Gaffield¹, Mike D. Tokach¹, Joel M. DeRouchey¹, Jordan T. Gebhardt¹, Robert D. Goodband¹, Keith Mertz², John Patience³

¹Kansas State University, ²Cargill Starches, Sweeteners, & Texturizers, ³Oxford Nutrition Consulting LLC

10:00 a.m. **Nonruminant Nutrition II: Break**

10:15 a.m. 37 **In vitro and In vivo Evaluation of Potato Protein as Alternative Protein Source for Weaning Piglets**

Laia Blavi¹, Francesc González-Solé¹, Simon Tibble¹, Astrid Koppenol¹

¹AB Neo

10:30 a.m. 38 **Dietary standardized Ileal digestible PHe:Lys Requirement of Nursery Pigs from 5 to 13 kg**

Sydney Craig¹, David Clizer², Dalton C. Humphrey¹, Keith D. Haydon², Laura L. Greiner¹

¹Iowa State University, ²CJ Bio

10:45 a.m. 39 **Evaluation of a Proprietary Blend of Prebiotics, Essential Oils and Acidifier on Intestinal Health of Nursery Pigs Challenged with F18⁺ *E coli***

Yesid R. Garavito-Duarte¹, Jung Yeol Sung¹, Megharaja Manangi², Sung Woo Kim¹

¹NC State University, ²Biomatrix International

11:00 a.m. 40 **Effects of Valoprowin and Formulation Strategy on Nursery Pig Performance and Fecal Dry Matter**

Julian Arroyave¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Mike D. Tokach¹, Jordan T. Gebhardt¹, Robert D. Goodband¹, Katelyn N. Gaffield¹, Pau Salgado-López², David Guillou³, Noemi Lemoine³

¹Kansas State University, ²Animal Nutrition and Welfare Service (SNIBA), Department of Animal and Food Science, Autonomous University of Barcelona, ³Mixscience

11:15 a.m. 41 **Effects of Monoglycerides Supplementation in Drinking Water on Growth Performance, Diarrhea and Mortality of Weanling Pigs Experimentally Infected with Enterotoxigenic *Escherichia coli* F18**

Youngmin Park¹, Sangwoo Park¹, Supatirada Wongchanla¹, Shuhan Sun¹, Yating Zhao¹, Jinuk Nam¹, Yanhong Liu¹

¹University of California, Davis

11:30 a.m. 42 **Improved Vitamin D Status in Post-weaning Piglets Increased Calcium Digestibility and Modulated the Immune Response Independently of the Husbandry Conditions**

Yanhong Luo¹, Ursula M. McCormack¹, Jose Maria Hernandez¹, Jincheng Zhang¹, Zhenzhen Wang¹, Shikui Wang¹, Estefania Perez Calvo¹

¹dsm-firmenich

Nonruminant Nutrition I: Gilts and Sow Nutrition I - Sponsored by DNA Genetics

Chair: Andres Bolivar Sierra, South Dakota State University

8:30 AM - 12:00 PM

205/206/207

8:30 a.m. 43 **The Effect of Sow Body Weight Change During Gestation on Sow Body Weight Change and Litter Average Daily Gain During Lactation**

Ron Aldwin S. Navales¹, Weasley A. Orlando², Jiyao Guo², Lori Kociemba², Carine M. Vier³, Joel M. DeRouchey⁴, Katelyn N. Gaffield⁴, Jordan T. Gebhardt⁴, Robert D. Goodband⁴, Mike D. Tokach⁴, Jason C. Woodworth⁴

¹Cargill Philippines, Inc., ²Genus PIC, ³PIC, ⁴Kansas State University

8:45 a.m. 44 **Effects of Dietary Protein on Nitrogen Balance, Reproductive Performance, Colostrum and Milk Compositions, and Blood Immune Characteristics of Sows**

Jimena A. Ibagon¹, Hans H. Stein², Su A Lee²

¹University of Illinois at Urbana-Champaign, ²University of Illinois

9:00 a.m. 45 **Impact of Metabolizable Energy (ME) or Lactation ADFI on Sow and Litter Performance**

Katherine A. McCormick¹, Grant I. Petersen¹, Chris L. Eden¹, Michael E. Johnston¹

¹United Animal Health

9:15 a.m. 46 **Supplementary dietary lysine (protein) coupled with exogenous porcine somatotropin in late-pregnancy: Effects on mammary development of gilts**

Chantal Farmer¹, Russell C. Hovey², Alexandra J. Dufresne³, Lee-Anne Huber⁴

¹Agriculture and Agri-Food Canada, ²University of California, Davis, ³Department of Animal Science, University of California, Davis, ⁴University of Guelph

9:30 a.m. 47 **Influence of 25-hydroxycholecalciferol and Dietary Calcium and Phosphorus on Calcium and Phosphorus Digestibility by Gestating Sows**

Diego Guerrero Huerta¹, Su A Lee¹, Hans H. Stein¹

¹University of Illinois

9:45 a.m. 48 **Feeding Peanut Skins to Lactating Sows on Sow and Litter Performance**

Cristhian Daniel Valladares¹, Eduardo Beltranena¹

¹North Carolina State University

10:00 a.m. **Nonruminant Nutrition I: Break**

10:15 a.m. 49 **Effects of a Dietary Select Essential Oil and Prebiotic Fiber Combination on Sow Reproductive and Litter Performance**

Katherine E. Klassen¹, Daphne Licuan², Kara Pounds¹, Jacob Knoy³, Jacob A. Richert⁴, Russell W. Fent⁴, Carson V. Scharlau⁴, Kevin J. Touchette⁴, Josh P. Knapp⁴, Shelly R. Widmer⁴, Tingting Ju¹, Brian T. Richert¹

¹Purdue University, ²University of Illinois Urbana-Champaign, ³Kansas State University, ⁴Ralco Agriculture

10:30 a.m. 50 **Lactation and Reproductive Performance of Sows Fed Heightened SID Lys or Vitamin C During Late Gestation**

Steve J. Kitt¹, Ethan W. Stephenson², Ashley R. Hartman³, Tom Rathje⁴, Brady McNeil⁴, Amanda Cross⁴, Christine Mainquist-Whigham²

¹Pillen Family Farms & DNA Genetics, ²Pillen Family Farms, ³Kansas State University, ⁴DNA Genetics

10:45 a.m. 51 **Characterizing Whole Body Protein Deposition and Blood Amino Acid Profiles of Gestating Sows in the First 3 Weeks After Breeding with or Without Recovery from Previous Lactation**

Ashir Foreman Atoo¹, Ryan S. Samuel¹, Lucas Alves Rodrigues², Crystal L. Levesque¹

¹South Dakota State University, ²Zinpro Corporation

11:00 a.m. 52 **Determining the Dietary Standardized Ileal Digestible Lysine Level for Lactating Sows**

Elizabeth M. Due¹, Nicholas K. Gabler², Amanda Cross³, Ashley R. Hartman⁴, Steven Kitt³, Ethan W. Stephenson⁵

¹Iowa State University, ²Department of Animal Science, Iowa State University, ³DNA Genetics, ⁴Kansas State University, ⁵Pillen Family Farms

11:15 a.m. 53 **Feeding the Prolific Sow for Success, Part I: Late-gestation Phase Feeding Improves Maternal and Progeny Micronutrient Status and Piglet Viability in Prolific Sows**

Katlyn A. McClellan¹, Jesus A. Acosta Camargo², Bradley V. Lawrence², Sara Hough³, Jon R. Bergstrom³, Mark Weaver⁴, Rebecca C. Robbins⁴, Eric M. Weaver¹

¹South Dakota State University, ²Novus International, ³dsm-firmenich, ⁴Pig Improvement Company

11:30 a.m. 54 **Feeding the Prolific Sow for Success, Part II: Late-gestation Phase Feeding Across Multiple Cycles Enhances Prolificacy**

Katlyn A. McClellan¹, Jesus A. Acosta Camargo², Bradley V. Lawrence², Sara Hough³, Jon R. Bergstrom³, Mark Weaver⁴, Rebecca C. Robbins⁴, Eric M. Weaver¹

¹South Dakota State University, ²Novus International, ³dsm-firmenich, ⁴Pig Improvement Company

11:45 a.m. 55 **Effects of Protein Supplementation During Early Gestation on Sow Reproductive Performance, Sow Metabolism, and Offspring Pre-weaning Outcomes**

Hector Hernandez Espinal¹, Christian Ramirez Camba¹, Pedro E. Urriola¹, Hayford Manu²

¹University of Minnesota, Department of Animal Science, ²University of Minnesota, Southern Research and Outreach Center

Poster Session 2

10:00 AM - 10:45 AM

Grand Ballroom Pre-Function

10:00 a.m. PS2-1 **Ex vivo and in vivo Methods Comparisons for Daily Methane Production Estimates in Commercial Beef x Dairy Steers**

Madison L. Bemisderfer¹, Logan R. Thompson², Haley E. Larson¹

¹Kansas State University Olathe, ²Kansas State University

10:00 a.m. PS2-2 **Characterization of Differentially Expressed Genes in Abscessed and Non-abscessed Livers of Beef x Holstein Feedlot Steers**

Melanie Pimentel-Concepción¹, Jerad Jaborek², Andrea M. Luttman¹, Daniel Buskirk¹

¹Michigan State University, ²Michigan State University Extension

10:00 a.m. PS2-3 **Assessing the Degradability of a Soybean Hull-based Baling Twine**

Christy Finck¹, Marc L. Bauer¹, Kendall C. Swanson¹, Long Jiang¹

¹North Dakota State University

10:00 a.m. PS2-4 **Viability of Kummerowia Stipulacea Seeds After in vitro Rumen and Abomasal Digestion**

Ashlee Gibbons¹, Madison L. Bemisderfer¹, Logan R. Thompson², Haley E. Larson¹

¹Kansas State University Olathe, ²Kansas State University

10:00 a.m. PS2-5 **Association of Feedlot Pen-surface Moisture, pH, and Temperature with Unmanned Aerial Vehicle Thermal Imagery**

Logan E. Diller¹, Logan R. Thompson¹, Cody Schneider², Haley E. Larson³

¹Kansas State University, ²Cornbelt Livestock Services, ³Kansas State University Olathe

10:00 a.m. PS2-6 **Effects of Inclusion of an omega-3 Fatty Acid-based Supplement on Thermographic Temperature Measurements and Semen Quality of Beef Bulls**

Samuel Costa¹, Allen G. Schwartz¹, Brandon J. Fraser¹, Danielle M. Stock¹, Jordana Zimmermann¹, Eduarda M. Bortoluzzi¹, Adam Bassett¹, Saulo Zoca², Nicholas Dias¹, Jason M. Warner¹

¹Kansas State University, ²University of Tennessee

10:00 a.m. PS2-7 **A Comparison of 14-d vs 6-d CIDR Protocol on Conception Rates in Crossbred Angus Heifers**

Isabella R. Becerra¹, Kirsten A. Midkiff¹, Elizabeth B. Kegley¹, Robin A. Cheek¹, Jana L. Reynolds¹, Alexis J. Harness¹, Charles R. Looney¹, Jeremy G. Powell¹

¹University of Arkansas

10:00 a.m. PS2-8 **Early Weaning Stress Influences Intestinal Development and Functions of Nutrient Sensing, Digestion, and Transport in Pigs**

Zhaoyan Zhu¹

¹University of Delaware

10:00 a.m. PS2-9 **Evaluation of In-utero Sperm Viability Using Heterospermic Insemination in Beef Cattle**

Cassia A. Gruis¹, Danielle M. Stock¹, David M. Grieger¹

¹Kansas State University

10:00 a.m. PS2-10 **Jejunum Porcine Intestinal Organoids as a Complex in vitro Model to Study Gut Health and Reduce the Need for in vivo Experimentation**

Claudia Müller-Sánchez¹, Sergi López-Vergé², Gemma Tedó², Manuel Reina¹, Jose J. Pastor²

¹Celltec-UB, ²Lucta SA

10:00 a.m. PS2-11 **Effect of L-proline on Boar Semen Quality Post Collection in a Variable Temperature Environment**

Kyle Lovercamp¹, Brooke Eichelberger¹, Leiha Glaze¹

¹University of Central Missouri

10:00 a.m. PS2-12 **Exploring Communication Preferences in Full-Time Swine Employees to Enhance Understanding, and Workplace Effectiveness**

Jayden Lawrence¹, Anna K. Johnson¹, Nicholas K. Gabler², Ulrike Genschel¹

¹Iowa State University, ²Department of Animal Science, Iowa State University

10:00 a.m. PS2-13 **Growth Performance of Weanling Pigs Fed Diets Supplemented with a Novel Acidifier**

Andrea Paola P. Mallea Ortiz ¹, Su A Lee ¹, Jimena A. Ibagón ², Hans H. Stein ¹

¹University of Illinois, ²University of Illinois at Urbana-Champaign

10:00 a.m. PS2-14 **Evaluation of Phase Feeding and Complete Diet Blending on Growing-finishing Pigs' Growth Performance and Diet Economics**

Ron Aldwin S. Navales ¹, Mike D. Tokach ², Mike Reard ³, Alan Warner ⁴, Chad W. Hastad ⁴, Joel M. DeRouchey ², Katelyn N. Gaffield ², Jordan T. Gebhardt ², Robert D. Goodband ², Jason C. Woodworth ²

¹Cargill Philippines, Inc. , ²Kansas State University, ³ComDel Innovation, ⁴New Fashion Pork

10:00 a.m. PS2-15 **Effects of Dietary Tribasic Copper Chloride Level and Duration in Growing-finish Pigs**

Courtney Pohlen ¹, Angel Martinez ¹, Eric M. Weaver ¹, Rafe Royall ¹

¹South Dakota State University

10:00 a.m. PS2-16 **Impact of Crude Protein-deficient Diets and Benzoic Acid Supplementation on Nitrogen Utilization in Nursery Pigs**

Paulo Azevedo ¹, Alex Outlaw ², Jonas McAbee ², Andrea Ponce ², Marko Rudar ²

¹Auburn University, ²Auburn University

10:00 a.m. PS2-17 **Effects of Dietary L-glutamate, L-aspartate, and Their Combination on Amino Acid Digestibility and Red Blood Cell Profiles of Weaned Piglets Challenged with Enterotoxigenic *Escherichia coli* F18**

Supatirada Wongchanla ¹, Youngmin Park ¹, Sangwoo Park ¹, Shuhan Sun ¹, Yanhong Liu ¹

¹University of California, Davis

10:00 a.m. PS2-18 **Effects of a Phytogetic Polyphenol Blend on Nursery Pig Performance**

Sabrina B. May ¹, Molly L. McGhee ¹, Brooke Smith ¹, Amanda Elsbernd ¹

¹Cargill Animal Nutrition & Health

10:00 a.m. PS2-19 **Addition of Fiber Sources in Diets for Weaning Piglets Improved Growth Performance**

Hélio Moreira Junior ¹, José A. L. Barbosa ¹, Amanda Gorrosterrazú ¹, Dener Oliveira Moreira ¹, Carlos Eduardo Martins Bertanha ¹, João Lucca Brito ¹, Samya Stefani Silva Souza ¹, Marcos L. P. L. P. Tsé ², Urbano S. Santos Ruiz ²

¹University of São Paulo, ²São Paulo State University

Beef/Small Ruminant Translational

Chair: Colby Redifer, Division of Animal Sciences, University of Missouri

11:15 AM - 12:00 PM

213/214

11:15 a.m. 56 Assessment of Free-choice Mineral and Salt Intake of Lactating Beef Cows Grazing Flint Hills Rangeland

Megan Sollors¹, Carlee M. Salisbury¹, Samuel Costa¹, Logan R. Thompson¹, Jason M. Warner¹
¹Kansas State University

11:30 a.m. 57 Comparison of Logistic Regression Models to Analyze Respiratory Health Status in Weaned Beef Calves

Audrey Tarochione¹, Miranda K. Culbertson¹, Ross Havens²
¹Iowa State University, ²Nichols Farms Ltd.

11:45 a.m. 58 Evaluating Optimal Days on Test for Reliable Methane Emissions in Beef Cattle

Jaedyn M. Condon¹, Miranda K. Culbertson¹, Ross Havens²
¹Iowa State University, ²Nichols Farms Ltd.

Physiology I: Reproductive Physiology

Chair: Kolapo Ajuwon, Purdue University

1:30 PM - 3:15 PM

213/214

1:30 p.m. 59 Single-cell Transcriptomics reveals atrazine-induced Reprogramming of Porcine Leydig Cells

Caitlin E. Ross¹, Jean-Jack M. Riethoven¹, Chia S. Liew¹, Amy T. Desaulniers¹
¹University of Nebraska - Lincoln

1:45 p.m. 60 Impact of Sow's Insulin Resistance on Reproductive and Litter Performance, and on the Colostrum Metabolomic Profile

Paolo Trevisi¹, Mattia Uguzzoni¹, Irene Borello², Federico Correa³, Diana Luise³, Barbara Polimeni¹, Annalisa Scollo²
¹Department of Agricultural and Food Science (DISTAL) - University of Bologna, ²Department of Veterinary Sciences - University of Turin, ³University of Bologna

2:00 p.m. 61 Sow Anemia and Piglet Iron Supplementation: Impacts on Farrowing and Weaning Performance

Paolo Trevisi¹, Mattia Uguzzoni¹, Federico Correa², Diana Luise², Barbara Polimeni¹, Irene Borello³, Annalisa Scollo³
¹Department of Agricultural and Food Science (DISTAL) - University of Bologna, ²University of Bologna, ³Department of Veterinary Sciences - University of Turin

2:15 p.m. 62 **Evaluation of Conventional vs Sexed-sorted Semen for Fixed-time Artificial Insemination During a 14-day Estrous Synchronization in Mature Beef Cows**

Jacy L. Riddle¹, Jeremy G. Powell¹, Bernard W. Krumpelman², Bryan L. Bacher², Robin A. Cheek¹, Cody Bright¹, Evelyn A. Gilbreth¹, Charles R. Looney²

¹University of Arkansas, ²University of Arkansas Division of Agriculture

2:30 p.m. 63 **Evidence of Putative Epithelial Stem/progenitor Cells in the Bovine Endometrium: Implications for Fertility**

Isabella Sellmer Ramos¹, Monica O. Caldeira¹, Joao G. N. Moraes², Scott E. Pooch¹, Matthew C. Lucy¹, Amanda L. Patterson¹

¹University of Missouri-Columbia, ²Oklahoma State University

2:45 p.m. 64 **Anogenital Distances Measurements Predict Heifer Reproductive Longevity and Success in Pubertal Classifications**

Karson D. Patton¹, Brooke E. Rudloff², Mackenzie Stohlmann², Corrine F. Monaco², Andrea S. Cupp¹, Scott G. Kurz²

¹University of Nebraska-Lincoln, ²University of Nebraska Lincoln

3:00 p.m. 65 **Maternal Performance, Metabolic Status, and Calf Size at Birth for Beef Cows with Historically Divergent Fetal Growth Fed at a Similar Nutritional Plane During Late Gestation**

Colby A. Redifer¹, Allison M. Meyer¹, Matthew S. Crouse², Robert A. Cushman³

¹Division of Animal Sciences, University of Missouri, ²U.S. Meat Animal Research Center, ³USDA, U.S. Meat Animal Research Center

Graduate Student Oral Competition MS - Sponsored by the Gretchen Hill Appreciation Club

1:30 PM - 5:00 PM

210/211/212

1:30 p.m. 66 **Effects of a Second Iron Injection and Sire Line on Growth Performance, Hemoglobin Levels, Antioxidative Status and Whole-body Iron Retention in Piglets**

Jannell A. Torres¹, Chan Ho Kwon¹, Eva S. Safaie¹, Savannah Locke¹, Madison Mejia¹, Shelby Greer¹, Ji Hye Lee¹, Wesley Lyons², Scott Fritz³, Young Dal Jang¹

¹University of Georgia, ²Pharmacosmos Inc., ³Kansas State University

1:45 p.m. 67 **Effect of Daily Adrenocorticotrophic Hormone Injections in Lactating Ewes on Growth and Metabolism of the Ewe and Their Offspring**

Melva Tacuri-Vera¹, Braden J. Campbell¹, Alejandro E. Relling¹

¹The Ohio State University

2:00 p.m. 68 **Evaluation of Increasing Trypsin Inhibitor on Nursery Pig Growth Performance, Fecal Dry Matter, and Nutrient Digestibility**

Sierra M. Collier¹, Paige T. Soper¹, Katelyn N. Gaffield¹, Robert D. Goodband¹, Mike D. Tokach¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Jordan T. Gebhardt¹, Hari B. Krishnan²
¹Kansas State University, ²USDA-Agricultural Research Service

2:15 p.m. 69 **Determination of the Relative Bioavailability of Potentiated Zinc in Ruminants**

Emily Dahlback¹, Dathan T. Smerchek¹
¹Iowa State University

2:30 p.m. 70 **Validation of a Commercial Ai-driven Computer Vision Behavior Analytics Platform for Growing-finishing Pigs**

Isaac Suazo¹, Suzanne M. Leonard², Eric van Heugten³, lingjuan wang-Li¹
¹NORTH CAROLINA STATE UNIVERSITY, ²North Carolina State University, ³Department of Animal Science, North Carolina State University

2:45 p.m. 71 **Performance, Enteric Gas Emissions, and Protozoal Enumeration in Growing Beef Steers Supplemented with a Proprietary Essential Oil Blend**

Ashlee Gibbons¹, Colton D. Weir², Nathan Pike³, Logan R. Thompson², Haley E. Larson¹
¹Kansas State University Olathe, ²Kansas State University, ³Alltech

3:00 p.m. **Graduate Student Oral Competition MS Break**

3:15 p.m. 73 **Effect of Residual Methane Production on Growth, Feed Intake, Feed Efficiency, Body Composition, and Gas Exchange in Growing Beef Heifers**

Pedro Simeone¹, Anna M. Kobza¹, Debora Gomes de Sousa¹, Sophia Collett¹, Paul J. Kononoff², Galen E. Erickson³, Keara O'Reilly³
¹University of Nebraska-Lincoln, ²University of Nebraska, ³Department of Animal Science, University of Nebraska, Lincoln

3:30 p.m. 74 **Supplementing Tryptophan in Late Gestation Diets to Group-housed Sows Under Commercial Conditions: Effects on Aggressive Interactions and Sow and Litter Performance**

Carley R. Hopkins¹, Cooper T. McAuley², Katelyn N. Gaffield², Jason C. Woodworth², Clayton S. Chastain³, Joel M. DeRouchey², Matt Frizzo⁴, Shelby L. Diggs¹, Jordan T. Gebhardt², Robert D. Goodband², Eric Parr⁴, Nicholas J. Prosek¹, Caitlyn R. Sullivan¹, Mike D. Tokach², Jay S. Johnson¹
¹University of Missouri, ²Kansas State University, ³Carthage Veterinary Services, ⁴Carthage Innovative Swine Solutions, LLC

3:45 p.m. 75 **Elucidating the Impact of Lubabegron on Skeletal Muscle Development and Intramuscular Adipose Tissue Response in Finishing Steers**

Anna M. Munger¹, Byungkyoo Park¹, Donghun Kang¹, Erika P. Eckhardt¹, Andrea M. Luttman¹, Andrea J. Garmyn¹, Nathan Pyatt², Jongkyoo Kim¹

¹Michigan State University, ²Elanco

4:00 p.m. 76 **Accuracy of Volumetric Supplement Doser for Gestating Sow Electronic Feeders**

Samuel Berrio¹, Pedro E. Urriola², Mike J. Boerboom³, Hyatt Frobose⁴, Amanda Uitermarkt⁴, Lee J. Johnston⁵

¹University of Minnesota, ²University of Minnesota, Department of Animal Science, ³Boerbooms Ag. resources, ⁴Jyga Technologies - GESTAL, ⁵West Central Research and Outreach Center, University of Minnesota

4:15 p.m. 77 **Effects of Feeding Whole Corn vs. Dry-rolled Corn at 5% or 15% Forage Inclusion on Growth Performance, Feeding Behavior, and Carcass Characteristics of Finishing Steers**

Christy Finck¹, Pauliane Pucetti¹, Kendall C. Swanson¹

¹North Dakota State University

4:30 p.m. 78 **Effects of Various Combinations of Zinc and Copper Sources on Mitochondrial Zinc and Copper Status and Respiration in Different Tissues of Post-weaned Piglets**

Jose Vitor Silva Duarte¹, Jiovani Sergio Bee Tubin², Isabelle Audet², Danyel Bueno Dalto²

¹Agriculture and Agri-Food Canada / University of Saskatchewan, ²Agriculture and Agri-Food Canada

4:45 p.m. 79 **Effects of Steam Flaked Corn on Growth Performance, Carcass Characteristics, and Gastrointestinal Tract Health in Feeder Lambs**

Reanna R. Byrnes Schoen¹, Warren C. Rusche¹, Zachary K. Smith¹, Federico Podversich¹

¹South Dakota State University

Nonruminant Nutrition III: Grow-finish Pig Nutrition I

Chair: Eric Weaver, South Dakota State University

1:30 PM - 5:00 PM

Ballroom A

1:30 p.m. 80 **Effect of Standardized Ileal Digestible Lysine to Crude Protein Ratio on Growth Performance and Blood Urea Nitrogen of 45 to 125 kg Pigs**

Ron Aldwin S. Navales¹, Jessica Smallfield², Joel M. DeRouchey², Katelyn N. Gaffield², Jordan T. Gebhardt², Robert D. Goodband², Mike D. Tokach², Jason C. Woodworth²

¹Cargill Philippines, Inc., ²Kansas State University

1:45 p.m. 81 **A Method to Quantify Variation in Feed Intake and Growth Patterns in Growing Pigs**

Jaap van Milgen¹, Ludovic Brossard¹

¹INRAE

2:00 p.m. 82 **Evaluation of Pellet and Meal Feeding Programs on Finisher Pig Growth Performance and Carcass Characteristics**

Katherine A. McCormick¹, Rodney B. Hinson¹, Christopher L. Puls¹, Tricia S. Kresel¹

¹United Animal Health

2:15 p.m. 83 **Effect of Phosphorus Levels on Growth Performance, Bone, and Carcass Characteristics in PIC 800-sired Nursery and Finishing Pigs**

Tomas Porcel de Peralta¹, Mike D. Tokach¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Robert D. Goodband¹, Katelyn N. Gaffield¹, Jordan T. Gebhardt¹, Carine M. Vier², Matthew Spindler², Uislei A. Orlando³, Luis E. Zaragoza², Ning Lu³, Wayne R. Cast³, Julia Holen⁴, Haley Schwecke⁴, Alyssa Betlach⁵

¹Kansas State University, ²PIC, ³Genus PIC, ⁴Swine Vet Center, ⁵Swine Veterinary Center

2:30 p.m. 84 **Effects of Reducing Dietary Energy Density by Modifying Fat or Fiber Inclusion on Growth Performance and Carcass Characteristics of Finishing Pigs**

Pau Salgado-López¹, Jordi Bonet², Carme Soldevila², Jaume Coma²

¹Animal Nutrition and Welfare Service (SNIBA), Department of Animal and Food Science, Autonomous University of Barcelona, ²Vall Companys Group

2:45 p.m. 85 **Effects of Using an Emulsifier on Energy Digestibility and Growth Performance of Growing Pigs**

Victor G. Perez¹, Su A Lee², Hans H. Stein²

¹Kemin Industries, ²University of Illinois

3:00 p.m. 86 **Effects of a Proprietary Copper-clay Compound and Tribasic Copper Chloride on Growth Performance, and Distal Gut Microbial Populations in Growing-finishing Pigs (25 to 133 kg BW)**

Daniel B. Jones¹, Sebastien Constantin², Ethan W. Stephenson³, Joseph C. Sparks²

¹Archer Daniels Midland Company, ²Archer Daniels Midland Company, ³Pillen Family Farms

3:15 p.m. **Nonruminant Nutrition III: Break**

3:30 p.m. 87 **Effects of Different Dietary Energy Levels on Growth Performance and Carcass Characteristics of PIC 337 or 800 Sired Grow-finish Pigs**

Jiyao Guo¹, Jordi Camp Montoro², Carine M. Vier², Wayne R. Cast¹, Steve Dritz², Ning Lu¹, Luis E. Zaragoza², Danielle Wilson-Wells², Eunice Delphia², Jose Landero³, Malachy Young³, Weasley A. Orlando¹

¹Genus PIC, ²PIC, ³Gowans Feed Consulting

3:45 p.m. 88 **Effects of Saccharomyces Cerevisiae Postbiotics on the Performance of Growing-finishing Pigs Fed Diets with and Without Narasin**

Roger A. Arentson¹, Jenna A. Seltzer¹, Jake Erceg¹, Scott N. Carr¹, Jeff A. Hansen¹, Matthew A. Vaughn², Chad Yoder¹

¹Elanco, ²Puretein Bioscience LLC

4:00 p.m. 89 **The Effects of Dietary Net Energy on Growth Performance and Carcass Characteristics of PIC 337 or PIC 800 Sired Grow-finish Pigs**

Carine M. Vier¹, Jiyao Guo², Jordi Camp Montoro¹, Wayne R. Cast², Jorge Estrada³, Ning Lu², Luis E. Zaragoza¹, Danielle Wilson-Wells¹, Eunice Delphia¹, Matt Frizzo³, Steve Dritz¹, Weasley A. Orlando²

¹PIC, ²Genus PIC, ³Carthage Innovative Swine Solutions, LLC

4:15 p.m. 90 **Methionine Hydroxy Analogue Bis-chelate Minerals Enhance Growth Rate, Closeout Feed Conversion and Total Pork Sold to Primary Markets**

Jesus A. Acosta Camargo¹, Bradley V. Lawrence¹, Nick Shelton², Sue M. Knutson², Ran Song², Deana Hancock³

¹Novus International, ²NutriQuest, ³Novus International Inc

4:30 p.m. 91 **Strategic Use of Dietary Copper During the Growing-finishing Phase and Its Effects on Pig Growth Performance**

Jessica Lira-Silva¹, Joseph G. Halbur¹, Eric M. Weaver¹, Carter Kenneth Ross¹

¹South Dakota State University

4:45 p.m. 92 **Outperforming Probiotic Rivals: Bacillus Velezensis Consortium Leads in Gut Adhesion and Inflammation Control**

Katrine Bie Larsen¹, Deepak E. Velayudhan², Ester Vinyeta², Steffen Yde Bak¹, Niels Cristensen¹, Chong Shen¹

¹IFF, ²Danisco Animal Nutrition & Health (IFF)

David Baker Symposium - Sponsored by David H. Baker Appreciation Club

Chair: Sung Woo Kim, NC State University

1:30 PM - 5:15 PM

Ballroom C

1:30 p.m. **David Baker Symposium Introduction**

1:35 p.m. 72 **Genetic Trends of Protein Deposition and Amino Acid Needs of Pigs**
Jiyao Guo¹, Pieter Knap², Steve Dritz², Leonardo Siqueira Gloria², Jordi Camp Montoro², Carine M. Vier², Wayne R. Cast¹, Ning Lu¹, Weasley A. Orlando¹

¹Genus PIC, ²PIC

2:15 p.m. 99 **Implications of Increased Nitrogen Retention in Modern Pigs**

Hans H. Stein¹

¹University of Illinois

2:55 p.m. 100 **Growth Performance Effects of Dietary Intact Protein or Synthetic Amino Acids on Early Grower Pigs**

Courtney Pohlen¹, Rafe Royall¹, Robert C. Thaler¹, Eric M. Weaver¹

¹South Dakota State University

3:10 p.m. **David Baker Symposium Break**

3:25 p.m. 101 **The indispensability of dispensable amino acids in feeding pigs**

Marko Rudar¹

¹Auburn University

4:05 p.m. 102 **Nutritional Needs of Non-essential Amino Acids for Intestinal Health and Growth Performance of Nursery Pigs Fed Diets Without Soybean Meal**

Jung Yeol Sung¹, Yesid R. Garavito-Duarte¹, Sung Woo Kim¹

¹NC State University

4:20 p.m. 103 **Redefining the Amino Acid Paradigm for Modern Sows**

Laura L. Greiner¹

¹Iowa State University

Ruminant Nutrition I: Production Enhancing Technologies in Cattle

Chair: Dathan Smerchek, Iowa State University

1:45 PM - 3:15 PM

205/206/207

1:45 p.m. 93 **Evaluation of the Maternal Bovine Appeasing Substance Administered at Arrival and Time of Reimplant on Feedlot Performance and Carcass Characteristics of Yearling Beef Steers**

Carsten Loseke¹, Galen E. Erickson¹, Tate S. Johnson², Jessica L. Sperber³

¹Department of Animal Science, University of Nebraska, Lincoln, ²Department of Animal Science, University of Nebraska- Lincoln, ³Department of Animal Science, University of Nebraska

2:00 p.m. 94 **The Effect of Supplemental Calcidiol (HyD) on Implant-induced Growth After an 18-hour Transit Event**

Jacob A. Henderson¹, Stephanie L. Hansen¹

¹Iowa State University

2:15 p.m. 95 **Effect of Increasing Potency of an Initial Steroidal Implant on Growth Performance of Newly-weaned Beef Steers During the Dry-lot Phase**

Weston J. Peschel¹, Federico Podversich², Warren C. Rusche², Zachary K. Smith²

¹SDSU, ²South Dakota State University

2:30 p.m. 96 **Comparison of Spayed Heifers to Intact Heifers Fed Melengestrol Acetate on Feedlot Performance and Carcass Characteristics**

Tate S. Johnson¹, Rebecca L. McDermott², Halden Clark³, Jim C. MacDonald⁴, Jessica L. Sperber⁵

¹Department of Animal Science, University of Nebraska- Lincoln, ²University of Nebraska- Lincoln, ³University of Nebraska- Lincoln, ⁴Department of Animal Science, University of Nebraska, Lincoln, ⁵Department of Animal Science, University of Nebraska

2:45 p.m. 97 **Effects of Feeding Lubabegron or Ractopamine Hydrochloride on Carcass Characteristics and Meat Tenderness in Beef Steers**

Lauryn Smidt¹, Rebecca L. McDermott², Jim C. MacDonald³, Galen E. Erickson³, Jordan Wicks², Jessica L. Sperber⁴

¹University of Nebraska - Lincoln, ²University of Nebraska-Lincoln, ³Department of Animal Science, University of Nebraska, Lincoln, ⁴Department of Animal Science, University of Nebraska

3:00 p.m. 98 **The Effect of Lubabegron Fumarate Feeding Duration on the Growth Performance and Carcass Characteristics of Finishing Steers**

Ty A. Skartvedt¹, Dathan T. Smerchek¹, Emily Dahlback¹

¹Iowa State University

Animal Behavior and Well-being Symposium: Beef on Dairy: What Are the Risk Factors for Health and Productivity Issues for the Grower, Feedlot, and Processor?

Chair: Andrea Luttmann, Michigan State University

2:00 PM - 5:00 PM

Ballroom B

2:00 p.m. **Animal Behavior, Health and Well-being Symposium Introduction**

2:05 p.m. 104 **Looks can be deceiving: Compensatory growth fails to offset carcass quality losses from early-life lung consolidation in beef x dairy calves**

Melissa C. Cantor¹

¹Pennsylvania State University

2:40 p.m. 105 **Impact of Fiber Inclusion in the Finishing Diet on the Behavior and Health of Beef x Dairy Steers**

Jerad Jaborek¹

¹Michigan State University Extension

3:15 p.m. **Animal Behavior, Health and Well-being Symposium Break**

3:30 p.m. 106 **Differences in Health, Feed Intake, and Growth Between Holstein and Beef-on-dairy Calves**

Vinicius Machado ¹

¹Texas Tech University

4:05 p.m. 107 **Behavior and Welfare Considerations for Crossbred Calves in Early Life**

Maddie Pinkerton ¹

¹Purdue University

4:40 p.m. **Animal Behavior, Health and Well-being Symposium Speaker Panel**

Undergraduate Student Oral Competition - Sponsored by the Gretchen Hill Appreciation Club

2:15 PM - 5:00 PM

215

2:15 p.m. 1 **Effects of Summer Dry Heat and Water Hardness on the Growth Performance of Pigs in the Southern Great Plains: A Preliminary Study**

Sungmin Cho ¹, Emma Traylor ¹, Aubrey Tambe ¹, Annabelle Foster ¹, Rachel Husak ¹, Chan Ho Kwon ², Young Dal Jang ², Janghan Choi ¹

¹Texas Tech University, ²University of Georgia

2:30 p.m. 2 **Comparison of Economic Selection Indexes for Beef x Beef and Beef x Dairy Breeding Objective**

Larissa Meier ¹, Matthew L. Spangler ¹

¹University of Nebraska

2:45 p.m. 3 **Impact of Trace In-feed Antibiotics on Growth Performance and Diarrhea Incidence in Weanling Pigs**

Carley Richardson ¹, Mariah R. Jansen ¹, Charlotte Ludorf ¹, Lily Trapp ¹, Kwangwook Kim ¹

¹Michigan State University

3:00 p.m. 4 **Evaluating Time-dependent Hydration Behavior of Fiber Sources Differing in Processing Origin and Physicochemical Properties**

Chloie Ashton ¹, Amy L. Petry ¹

¹University of Missouri

3:15 p.m. 5 **Effect of In-feed Antibiotics on the Need for Injectable Treatments in Finishing Pigs**

Paige T. Soper ¹, Joana Magoga ¹, Katelyn N. Gaffield ¹, Jordan T. Gebhardt ¹, Mike D. Tokach ¹, Jason C. Woodworth ¹, Robert D. Goodband ¹, Joel M. DeRouchey ¹

¹Kansas State University

3:30 p.m. **Undergraduate Student Oral Competition Break**

4:00 p.m. 8 **Effects of Bacillus Subtilis Combined with Plant Extracts on Small Intestinal Morphology in Weanling Pigs**

Lily Trapp¹, Mariah R. Jansen¹, Charlotte Ludorf¹, Carley Richardson¹, Hsinhung John Hsu², Chung-Nan Chen², Kwangwook Kim¹

¹Michigan State University, ²JH Biotech, Inc.

4:15 p.m. 9 **Determination of the Most Appropriate Measure of Variability in Dry Matter Intake in Relationship to Growth Performance of Feedlot Cattle**

Natalie Evans¹, Joshua C. McCann²

¹Murray State University, ²University of Illinois

4:30 p.m. 10 **Effect of Early Life Exposure to Atrazine on Uterine Maturation in Neonatal Piglets**

Samantha L. Crook¹, Isabella Sellmer Ramos¹, Amy T. Desaulniers², Amanda L. Patterson¹

¹University of Missouri-Columbia, ²University of Nebraska - Lincoln

4:45 p.m. 11 **Effect of Feeding Whole or Roasted Soybeans to Finishing Cattle on Fat Digestibility**

Emelia J. Rourke¹, Taylor A. Lewis¹, Melissa K. Bausch¹, Jessica L. Miller¹, Pablo L. Loza¹, Galen E. Erickson²

¹University of Nebraska-Lincoln, ²Department of Animal Science, University of Nebraska, Lincoln

Physiology II

Chair: Kolapo Ajuwon, Purdue University

3:30 PM - 4:30 PM

213/214

3:30 p.m. 108 **Development and Validation of a Transcriptomics-based Index to Assess Metabolic and Physiological Functions in the Blood of Pigs**

Maria C. Walsh¹, Luis F. Romero¹, Krutik Patel¹

¹Biofractal

3:45 p.m. 109 **Multi-block Spls-da Shows That Plasma Metabolomics Most Accurately Classifies Piglets Across Production Chains Than Fecal Metabolomics and Metagenomics**

Paolo Trevisi¹, Federico Correa², Diana Luise²

¹Department of Agricultural and Food Science (DISTAL) - University of Bologna, ²University of Bologna

4:00 p.m. 110 **In Utero Heat Stress and Genomic Selection for Heat Tolerance Alter Seminal Plasma Metabolite Profiles Associated with Semen Quality**

Brooke E. McAnally¹, Caitlin E. Ross², Daniel Ahern¹, MaryKate Harrod Byrd³, Jacob Musa⁴, Brett R. White¹, Clay A. Lents⁵, Luiz F. Brito⁴, Jay S. Johnson⁶, Amy T. Desaulniers²

¹University of Nebraska-Lincoln, ²University of Nebraska - Lincoln, ³University of Kentucky, ⁴Purdue University, ⁵USDA, U.S. Meat Animal Research Center, ⁶University of Missouri

4:15 p.m. 111 **Validation of Rightmate Precision Mating in Simmental Seedstock Beef Herds Shows Increased Rates of Genetic Progress**

Richard G. Tait¹, Mahdi Saatchi²

¹Optimum Genomics LLC, ²Top Genomics, LLC

Ruminant Nutrition II: Animal Behavior and Management

Chair: Federico Podversich, South Dakota State University

3:30 PM - 5:00 PM

205/206/207

3:30 p.m. 112 **Comparison of Breed Feeding Behavior of Finishing Beef Steers and Heifers on Extended Days on Feed**

Garrett D. Meyer¹, Federico Podversich¹, Grace H. Olinger¹, Warren C. Rusche¹, Zachary K. Smith¹

¹South Dakota State University

3:45 p.m. 113 **Effect of Feed Access Time on Feedlot Performance, Carcass Characteristics, Feeding Behavior, and Ruminal pH of Yearling Heifers**

Carsten Loseke¹, Rebecca L. McDermott², Josh R. Benton³, Keara O'Reilly¹, Galen E. Erickson¹, Jim C. MacDonald¹

¹Department of Animal Science, University of Nebraska, Lincoln, ²University of Nebraska-Lincoln, ³Eastern Nebraska Research, Extension, and Education Center, University of Nebraska

4:00 p.m. 114 **Estimation and Application of a Performance-derived Maintenance Energy Coefficient for Beef x Dairy Feedlot Cattle**

Nathan E. Rehder¹, Federico Podversich¹, Michael L. Galyean², Zachary K. Smith¹

¹South Dakota State University, ²Texas Tech University

4:15 p.m. 115 **Optimal Sampling Time for Indigestible Sugar Markers of Gastrointestinal Permeability in Yearling Cattle**

Liliana M. Rivas¹, Phillip A. Lancaster¹, Brad J. White¹, Geraldine J. Magnin²

¹Beef Cattle Institute, ²Kansas State University Veterinary Diagnostic Lab

4:30 p.m. 116 **Detection of Morbidity Using a Remote Sensing Ear Tag on Newly Received Steers and Feedlot Performance**

Lauryn Smidt ¹, Rebecca L. McDermott ², Jessica L. Sperber ³, Galen E. Erickson ⁴, Jim C. MacDonald ⁴

¹University of Nebraska - Lincoln, ²University of Nebraska-Lincoln, ³Department of Animal Science, University of Nebraska, ⁴Department of Animal Science, University of Nebraska, Lincoln

4:45 p.m. 117 **The Effect of Weighing Protocol on Precision and Accuracy of Prediction Average Daily Gain**

Andrea Lara ¹, Mary K. Drewnoski ², Jim C. MacDonald ³

¹University of Lincoln- Nebraska, ²University of Nebraska - Lincoln, ³Department of Animal Science, University of Nebraska, Lincoln

Poster Session 3

4:15 PM - 5:00 PM

Grand Ballroom Pre-Function

4:15 p.m. PS3-1 **The Supplementation of Microencapsulated Organic Acids Improves Litter Outcomes and Performance**

Olufemi O. Babatunde ¹, Chris Gwyn ¹, Glenmer B. Tactacan ¹, Ludovic Lahaye ¹, Mariana L. de Moraes ¹

¹Jefo Nutrition Inc

4:15 p.m. PS3-2 **Dietary Protein Concentration and Electrolyte Balance Affect Urine pH, Nitrogen Excretion, and Manure Odorous Compounds in Growing Pigs**

Hyunseok Do ¹, Okhwa Hwang ², Beob Gyun Kim ¹

¹Konkuk University, ²National Institute of Animal Science

4:15 p.m. PS3-3 **Effects of Simultaneous Supplementation of 3-phytase and 6-phytase on Phosphorus and Calcium Digestibility in Growing Pigs**

Hyunseok Do ¹, Beob Gyun Kim ¹

¹Konkuk University

4:15 p.m. PS3-4 **The Effect of Yeast Derived Postbiotics in Mitigating the Negative Impact of Porcine Reproductive and Respiratory Syndrome (PRRS) on Health and Performance of Nursery Piglets Challenged with PRRSv**

Tadele Kiros Gebreyohannes ¹, Joe Loughmiller ², Brian K. Kremer ²

¹Phileo by Lesaffre, ²Phileo by Lesaffre- North America

4:15 p.m. PS3-5 **Effects of Different Additives Replacing Zinc Oxide on Performance, Fecal Score, and Incidence of Diarrhea in Weaned Piglets**

Lucimauro Fonseca ¹, Gabriel Cedrola ¹, Gabriel Ribeiro Braga ¹, Bruno Ramos ¹, Gabriela da Silva ¹, Anne Koontz ², James Pettigrew ³, Melissa Izabel Hannas ¹

¹UFV, ²Alltech Inc., ³Pettigrew Research Service

4:15 p.m. PS3-6 **The Effect of a Cheese Co-product in Swine Lactation Diets on Sow and Litter Performance**

Grady Privett¹, Diego Lopez², Joel M. DeRouchey¹, Jason C. Woodworth¹, Katelyn N. Gaffield¹, Robert D. Goodband¹, Mike D. Tokach¹, Jordan T. Gebhardt¹

¹Kansas State University, ²Key Manufacturing

4:15 p.m. PS3-7 **On Top Dietary Inclusion of Wheat Middlings Modulates Intestinal Inflammation in Post-weaning Piglets Depending on Body Weight**

Júlia Suppi¹, Pau Salgado-López¹, Eudald Llauradó-Calero¹, Jaume Coma², Anna Pelegrí-Pineda³, Yolanda Saco³, Anna Bassols³, David Solà-Oriol¹

¹Animal Nutrition and Welfare Service (SNIBA), Department of Animal and Food Science, Autonomous University of Barcelona, ²Vall Companys Group, ³Veterinary Clinical Biochemistry Service (SBCV), Department of Biochemistry and Molecular Biology, Universitat Autònoma de Barcelona

4:15 p.m. PS3-8 **Effects of Short Chain Fatty Acids Derivatives on Serum Inflammatory Biomarkers and Intestinal Gene Expression in Weanling Pigs Challenged with F4 and F18 Enterotoxigenic *Escherichia Coli***

Shuhan Sun¹, Jinuk Nam¹, Sangwoo Park¹, Yating Zhao¹, Youngmin Park¹, Supatirada Wongchanla¹, Xunde Li¹, Peng Ji¹, Yanhong Liu¹

¹University of California, Davis

4:15 p.m. PS3-9 **Impact of an Early Postnatal Administration of an Energetic Supplement on Growth Performance, Behaviour and Gut Microbiota in Piglets with Different Birth Weight Classes**

Paolo Trevisi¹, Silvia Bencivenni², Diana Luise², Elizabeth Katherine Huenul Faundez³, Francesco Palumbo⁴

¹Department of Agricultural and Food Science (DISTAL) - University of Bologna, ²University of Bologna, ³Servicio de Nutrición y Bienestar Animal, Departament de Ciència Animal i dels Aliments, Universitat Autònoma de Barcelona, 08193 Bellaterra, Spain, ⁴Department of Agro-Food Sciences and Technologies, University of Bologna, Bologna, Italy

4:15 p.m. PS3-10 **Effect of Different Concentrations of Lysine on Growth Performance, Nutrient Digestibility and Faecal Scores in Weaning Pigs**

Seungjin Yun¹, Zhenyu Ding¹, Se Yeon Jang¹, In Ho Kim¹

¹Dankook University, Department of Animal Biotechnology

4:15 p.m. PS3-11 **Effects of a Lipopolysaccharide Challenge on Weaned Pigs: Evaluating the Immunomodulatory and Growth-promoting Roles of Dietary Silicate**

Seungjin Yun¹, Weihang Zhao¹, Se Yeon Jang¹, In Ho Kim¹

¹Dankook University, Department of Animal Biotechnology

4:15 p.m. PS3-12 **Effects of Non-nutritive Sweeteners on Colonic Microbiome Composition and Diversity in Weaned Pigs**

Mariah R. Jansen¹, Charlotte Ludorf¹, Lily Trapp¹, Kwangwook Kim¹

¹Michigan State University

4:15 p.m. PS3-13 **Effects of an Essential Oil Blend (ProsperEO™) on Grow Finish Pig Performance**

Josh P. Knapp¹, Jacob A. Richert¹, Russell W. Fent¹, Carson V. Scharlau¹, Kevin J. Touchette¹, Shelly R. Widmer¹

¹Ralco Agriculture

4:15 p.m. PS3-14 **Dietary Protein Level Modulates the Transcriptomic Response to Birth Weight in Artificially Reared Piglets**

Christina Larsen¹, Emma Christensen¹, Kimmie Lyderik¹, Helena Sato¹, Charlotte Amdi¹, Andrew R. Williams¹, Johannes Madsen¹

¹University of Copenhagen

4:15 p.m. PS3-15 **Comparison of Calculated and Measured Apparent Total Tract Calcium Digestibility in Pigs**

Julien Labarre¹, Nicolas Coquil¹, Marie-Pierre Letourneau Montminy¹

¹Laval University

4:15 p.m. PS3-16 **Determination of Metabolizable Energy and Amino Acid Digestibility of DDGS for Growing Pigs**

Stephane A B Da Motta¹, Rhuan F. Chaves², Rasiel Restelatto³, Vinícius S. Cantarelli¹

¹UFLA, ²Animalnutri, ³INPASA

4:15 p.m. PS3-17 **An Additional Iron Injection Improves Post-weaning Performance More Than a 7-day Low-protein Diet**

James E. Langley¹, Jeremy J. Cottrell¹, Surinder S. Chauhan¹, Sally Tritton², Frank R. Dunshea³, Kate J. Plush⁴

¹University Of Melbourne, ²The SunPork Group, ³University of Melborune, ⁴The Sunpork Group

4:15 p.m. PS3-18 **The Inclusion of Ferrous Sulphate as an Iron Source in the Diet Can Increase Post-weaning Diarrhea in Weaned Pigs**

James E. Langley¹, Cundong J. Xie², Farhad J. Ahmadi², Kate Phuong-Nguyen², Likeeth kumar Palani Alrun², David J. Cadogan³, Kate J. Plush⁴, Surinder S. Chauhan¹, John Pluske², Frank R. Dunshea², Jeremy J. Cottrell¹

¹University Of Melbourne, ²University of Melborune, ³Feedworks, ⁴The Sunpork Group

4:15 p.m. PS3-19 **Evaluation of Glucosamine or Phytogetic Supplementation in Swine Gestation Diets on Component Traits of Litter Size, Fetal, and Placental Development During Late Gestation in Primiparous Dams**

Jeremy R. Miles¹, Qiong Hu², Junmei Zhao², Xiaodan Zhou², Mark Newcomb², Oliver T. William¹, Clay A. Lents¹, Alexandria P. Snider¹, Robert A. Cushman¹, Lea A. Rempel¹
¹USDA, U.S. Meat Animal Research Center, ²Cargill

Growth, Development, Muscle Biology and Meat Science

Chair: Jessie Morrill, Department of Animal Science, University of Nebraska- Lincoln

4:45 PM - 5:15 PM

213/214

4:45 p.m. 118 **Long-term effects of maternal Vitamin A injection during late gestation on marbling in beef cattle revealed by an early-life transcriptomic approach**

José Oliveira¹, Sara Laura², Sérgio A. G. Pereira-Júnior³, Marcos Chiaratti⁴, Joshua C. McCann⁵, Marcio M. Ladeira²

¹University of Illinois Urbana-Champaign, Urbana, IL, USA, ²Universidade Federal de Lavras, Lavras, MG, Brazil, ³Federal University of São Carlos, São Carlos, SP, Brazil, ⁴Federal University of São Carlos, São Carlos, SP, Brazil, ⁵University of Illinois

5:00 p.m. 119 **Transcriptomic Changes in the Skeletal Muscle of Finishing Beef Steers Subject to Acute and Chronic Heat Stress**

Erika P. Eckhardt¹, Andrea M. Luttman¹, Jongkyoo Kim¹
¹Michigan State University

Tuesday, March 10, 2026

Poster Session 4 - Sponsored by the Gretchen Hill Appreciation Club

7:30 AM - 8:30 AM

Grand Ballroom Pre-Function

7:30 a.m. PS4-1 **Material Consequences: Flooring Type Modulates Sow Thermoregulation and Litter Survival in Summer Heat**

Ashley Rodman¹, Caitlyn R. Sullivan², Carley R. Hopkins², Jay S. Johnson²
¹University of Missouri, ²University of Missouri

7:30 a.m. PS4-2 **Relationship of Health Status to Growing Bull EPD, Performance, Carcass, and Fertility Traits in Red Angus, Angus, and Simmental Bulls**

Sophia Mathew¹, Maggie McStay², Joshua C. McCann³, Keela Trennepohl²
¹Western Illinois University, ²Purdue University, ³Western Illinois University, ³University of Illinois

7:30 a.m. PS4-3 **Effects of Heat Stress on Respiration Rate and Behaviors During Different Times of Day**

Kiley D. Sons¹, Grady W. Gullickson², Joshua C. McCann³, Daniel W. Shike²

¹Southern Illinois University, ²Department of Animal Sciences, College of ACES, University of Illinois, ³University of Illinois

7:30 a.m. PS4-4 **Effects of Age on Gastrointestinal Morphology, Morphometrics, and Digesta Changes in High-forage, Rotationally Grazed, Mineral-supplemented, Late-weaned Ruminants with Low Reproductive Performance**

Olivia B. Smith¹, Mark W. Allison¹, Raquel Baptiste¹

¹Berea College

7:30 a.m. PS4-5 **Water Consumption Behavior of Finishing Beef Steers and Heifers with Varying Proportions of Angus and Limousin Composition**

Martina J. DeBoer¹, Federico Podversich¹, Grace H. Olinger¹, Warren C. Rusche¹, Zachary K. Smith¹

¹South Dakota State University

7:30 a.m. PS4-6 **Effects of Water-based Yeast Bioactive Supplementation on Wean Pig Growth Performance and Health During the Nursery**

Brooklyn H. Goelz¹, Crystal L. Levesque¹, Andres F. Bolivar Sierra¹, Rob Patterson², Jorge Perez-Palencia²

¹South Dakota State University, ²CBS Bio Platforms Inc

7:30 a.m. PS4-7 **Interactions Between Water Hardness and pH on the Stability and Antimicrobial Efficacy of Tannic Acid in Swine Drinking Water**

Annabelle Foster¹, Emma Traylor¹, Chan Ho Kwon², Young Dal Jang², Janghan Choi¹

¹Texas Tech University, ²University of Georgia

7:30 a.m. PS4-8 **In Vitro Antimicrobial Efficacy and Ph Modulation in Different Water Sources of a Monoglyceride, Natural Extract and Organic Acid-based Feed Mitigant Against Salmonella Typhimurium**

Aubrey Tambe¹, Emma Traylor¹, Woong B. Kwon², Fredrik Sandberg², Steve J. England², Janghan Choi¹

¹Texas Tech University, ²Furst-McNess Company

7:30 a.m. PS4-9 **Characterization of Feed-borne Microbes and Establishment of a Salmonella Contamination Model**

Rachel Husak¹, Annabelle Foster¹, Sungmin Cho¹, Woong B. Kwon², Fredrik Sandberg², Steve J. England², Janghan Choi¹

¹Texas Tech University, ²Furst-McNess Company

7:30 a.m. PS4-10 **Effect of Corn Dried Distillers Grains with Solubles Contaminated with Varying Levels of Deoxynivalenol on Growth Performance and Health of Broilers**

Bree A. Koepke¹, Andres F. Bolivar Sierra¹, Crystal L. Levesque¹

¹South Dakota State University

7:30 a.m. PS4-11 **Effects of Ad Libitum Creep Feed Access on Calf Behavior Following Feeding of Cow Total Mixed Ration in a Confinement Cow-calf System**

Kavan M. Fye¹, Grady W. Gullickson², Joshua C. McCann³, Daniel W. Shike²

¹Purdue University, ²Department of Animal Sciences, College of ACES, University of Illinois,

³University of Illinois

7:30 a.m. PS4-12 **Evaluating the Effect of a Topical Oleic Acid Gel on Piglet Behavior and Heart Rate Variability Following Surgical Castration**

Lindsay C. Seevers¹, Tetiana Shevtsova¹, Andriy Voronov¹, Christopher J. Byrd¹

¹North Dakota State University

7:30 a.m. PS4-13 **Evaluation of Intake Consistency and Relationships with Feedlot Cattle Growth Performance and Carcass Characteristics**

Meagan S. Davis¹, Joshua C. McCann², Daniel W. Shike¹, Tiago Bresolin¹, Camila Braz¹

¹Department of Animal Sciences, College of ACES, University of Illinois, ²University of Illinois

7:30 a.m. PS4-14 **The Effects of Microalgae on in vitro Ruminal Fermentation**

Mabry Bruhn¹, Paige Berkmeier¹, Lance Schideman¹, Joshua C. McCann¹

¹University of Illinois

7:30 a.m. PS4-15 **Effects of Water-based Yeast Carbohydrate Supplementation on Growth Performance and Fecal Consistency of Weaned Pigs**

Haylie Trowbridge¹, Andres F. Bolivar Sierra¹, Jorge Perez-Palencia², Rob Patterson², Crystal L. Levesque¹

¹South Dakota State University, ²CBS Bio Platforms Inc

7:30 a.m. PS4-16 **Effects of Bacillus Subtilis Combined with Plant Extracts on Systemic Immunity in Weanling Pigs**

Charlotte Ludorf¹, Mariah R. Jansen¹, Hsinhung John Hsu², Chung-Nan Chen², Kwangwook Kim¹

¹Michigan State University, ²JH Biotech, Inc.

Swine Translational Symposium: Advancing Precision Feeding Strategies in Swine Production

Chair: Christopher Puls, United Animal Health

8:00 AM - 12:00 PM

Ballroom C

8:00 a.m. **Swine Translational Symposium Introduction**

8:10 a.m. 120 **Precision Feeding: Principles and Practice—Lessons Learned from Growing–finishing Pigs**

Aline Remus¹

¹AgriFood Canada

8:45 a.m. 121 **Precision Feeding Gilts for Lifetime Performance**

Thomas S. Bruun¹

¹SEGES Innovation

9:20 a.m. 122 **Progress in Precision Nutrition for Sows: Current Understanding and Future Direction**

Mikayla Spinler¹

¹Vita Plus

9:55 a.m. **Swine Translational Symposium Break**

10:10 a.m. 123 **Lessons Learned from Precision Feeding in Growing-finishing Pig**

Devin Goehring¹, Christopher L. Puls¹, Rebecca K. Pritchett¹

¹United Animal Health

10:45 a.m. 124 **Precision Feeding: From Idea to Practice**

Hyatt Frobose¹

¹Jyga Technologies - GESTAL

11:20 a.m. 125 **Economics of Precision Nutrition: Investment, Profitability, and ROI**

Lee J. Johnston¹

¹West Central Research and Outreach Center, University of Minnesota

Harlan Ritchie Symposium - Sponsored by American Angus Association

Chair: David Lust, West Texas A&M University

8:00 AM - 12:15 PM

Ballroom B

8:00 a.m. **Harlan Ritchie Symposium Introduction**

8:10 a.m. 307 **Are University Graduates Prepared to Meet the Expectations of Industry and Society?**

Thomas G. Field¹

¹Engler Agribusiness Entrepreneurship Program

8:40 a.m. 308 **The Current Workforce Labor Shortage and How It Is Affecting the Industry**
Marty Ropp¹

¹Allied Genetic Resources

9:10 a.m. 309 **Artificial Intelligence (AI) and the Three-part Mission of Land Grant Universities**

Jameson R. Brennan¹, Hector M. Menendez²

¹South Dakota State University, ²SDSU

9:40 a.m. **Harlan Ritchie Symposium Panel Discussion**

10:00 a.m. **Harlan Ritchie Symposium Break**

10:15 a.m. 310 **Texas Cattle Feeders Association Junior Fed Beef Career and Leadership Program**

David G. Lust¹

¹West Texas A&M University

10:30 a.m. 311 **Building Tomorrow's Beef Industry: Kansas State University Feedlot Boot Camp Program**

Karol E. Fike¹, Pete T. Anderson²

¹Kansas State University - Dept of Animal Sciences & Industry, ²Midwest PMS LLC

10:45 a.m. 312 **Overview of the Timmerman Feedyard Management Internship**

Jim C. MacDonald¹, Galen E. Erickson¹, Jessica L. Sperber²

¹Department of Animal Science, University of Nebraska, Lincoln, ²Department of Animal Science, University of Nebraska

11:00 a.m. 313 **Feedlot Nutritionist Boot Camp: Immersive Training for Graduate-level Students in Beef Cattle Nutrition**

Kendall L. Samuelson¹, Jason K. Smith², Kristin E. Hales³, Jenny S. Jennings⁴, John T. Richeson¹, Chris D. Reinhardt⁵

¹West Texas A&M University, ²Texas A&M AgriLife Extension, ³Texas Tech University, ⁴Five Rivers Cattle Feeding, ⁵Zinpro

11:15 a.m. 314 **Developing the Young Professional Through Educational Programs**

Mark McCully¹

¹American Angus Assoc.

11:30 a.m. 315 **Workforce Solutions and Innovations: What Is the Pork Industry Doing?**

M. Todd See¹

¹North Carolina State University

11:45 a.m. 316 **Strategies for Managing Trade NAFTA (TN) Visa Workers in the U.S. Swine Industry: Data-driven and Experience-based Approach**

Magdiel Lopez Soriano ¹, Talita P. Resende ², Andréia G. Arruda ³, Magnus Campler ³, Isaiah Franco ³, Kara E. Flaherty ³, Anna K. Johnson ⁴, Monique Pairis-Garcia ⁵, Samira Chatila ², Maria Pieters ², Pedro E. Urriola ⁶, Douglas Jackson-Smith ³, Timothy J. Safranski ¹

¹University of Missouri, ²University of Minnesota, ³The Ohio State University, ⁴Iowa State University, ⁵NC State University, ⁶University of Minnesota, Department of Animal Science

12:00 p.m. **Harlan Ritchie Symposium Closing**

Ruminant Nutrition III: Feed Additives: Vitamins and Minerals

Chair: Dathan Smerchek, Iowa State University

8:15 AM - 10:00 AM

213/214

8:15 a.m. 126 **Impact of Rumen-protected Vitamin Supplementation on Performance and Immunity of Newly Received Beef Steers**

Shoki Hirano ¹, Jodi L. McGill ¹, Stephanie L. Hansen ¹

¹Iowa State University

8:30 a.m. 127 **Effect of Dietary Inclusion of Bromoform Stabilized in Vegetable Oil Concurrently with Succinate-producing Bacteria on Gas Emissions, Ruminal Fermentation, and Digestibility in Growing Cattle**

Anaclara Daudet ¹, Lucas Gonzalez-Chappe ¹, Alejandro Pittaluga ¹, Alejandro E. Relling ¹

¹The Ohio State University

8:45 a.m. 128 **Effect of Encapsulated Fish Oil Supplementation on Growth Performance, Carcass Characteristics, and Blood Immunometabolic Biomarkers in Feedlot Finishing Steers**

Alejandro Pittaluga ¹, G. Andres Contreras ², Alejandro E. Relling ¹

¹The Ohio State University, ²Michigan State University

9:00 a.m. 129 **Stability of Vitamin a in a Free-choice Mineral Mix During Six Months of Storage**

Tanner K. Wansing ¹, Mary K. Drewnoski ¹

¹University of Nebraska - Lincoln

9:15 a.m. 130 **Maternal Vitamin a Supplementation Effects on Beef Calf Vitamin a Concentrations**

Marissa K. Eekohff ¹, Mary K. Drewnoski ², Miranda K. Culbertson ¹, Stephanie L. Hansen ¹

¹Iowa State University, ²University of Nebraska - Lincoln

9:30 a.m. 131 **Effects of a Positive Dietary Cation–anion Difference Diet on Growth Performance and Physiological Responses of Feedlot Steers During Heat Stress**

Emily Partee¹, Emma Rients¹, Marissa K. Eekohff¹, Stephanie L. Hansen¹

¹Iowa State University

9:45 a.m. 132 **Effect of Exogeneous Enzymes on Performance of Finishing Cattle Fed Sorghum-based Diets**

Elizabeth R. Kiselewski¹, Sarah Sexton-Bowser¹, Tatiana M. Jones¹, Ludmilla S. Monterio¹, Jaymelynn K. Farney¹, James S. Drouillard¹

¹Kansas State University

Nonruminant Nutrition V: Soybean Meal Utilization

Chair: Katelyn Gaffield, Kansas State University

8:15 AM - 11:45 AM

210/211/212

8:15 a.m. 158 **Award Talk: Impact of Soybean Meal on Growth Performance, Net Energy, Nitrogen Retention, and Greenhouse Gas Production When Included in Diets for Growing Pigs**

Jimena A. Ibagón¹, Hans H. Stein², Su A Lee²

¹University of Illinois at Urbana-Champaign, ²University of Illinois

8:45 a.m. 157 **Does Increasing Dietary Soybean Meal Levels Result in Improved Growth Performance, Wean-to-finish Livability, and Carcass value in a Commercial Wean-to-finish Swine Feeding Program?**

Trey A. Kellner¹, Macie Reeb¹, Kristin Olsen¹, Josh Ellingson², Bart Borg³, R. Dean Boyd⁴, Aaron M. Gaines⁵, Steve Pollmann³, Leigh Ruckman⁶, Chad M. Pilcher⁶

¹AMVC Nutritional Services, ²AMVC Management Services, ³United Soybean Board, ⁴Animal Nutrition Research, ⁵Ani-Tek, ⁶Cargill Animal Nutrition

9:00 a.m. 159 **Effects Of Thermo-Mechanically Processed Soybean Meal on Nursery Pig Growth and Fecal Characteristics**

Jessica Smallfield¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Mike D. Tokach¹, Robert D. Goodband¹, Katelyn N. Gaffield¹, Jordan T. Gebhardt¹, Alan Warner², Chad W. Hastad², Sabrina B. May³, Wesley Schweer⁴, Chad M. Pilcher⁴

¹Kansas State University, ²New Fashion Pork, ³Cargill Animal Nutrition & Health, ⁴Cargill Animal Nutrition

9:15 a.m. 160 **Evaluating the Metabolizable Energy of Ultra-high Protein, Low Oligosaccharide, Soybean Meal in Growing Pigs**

Abigail Dowell¹, Margaret Putnam¹, Erin zess², Matthew Begemann², Amy L. Petry¹

¹University of Missouri, ²Confluence Genetics

9:30 a.m. 161 **Life Cycle Impact Assessment of Soybean Meal Sourced from Argentina, Brazil, China, India, and the United States on Protein and Energy Basis in Swine Diets**

Isabel B. Walpole¹, Pedro E. Urriola², Jinsu Hong¹

¹Purdue University, ²University of Minnesota, Department of Animal Science

9:45 a.m. 162 **Effect of Feeding a Diet with an Elevated Level of Soybean Hulls on the Metabolic Status and Fecal Physicochemical Characteristics of Mid-gestation Sows Under Two Housing Systems**

Samuel F. Leiva¹, Flavia Letsch², Chloe Ashton², Margaret Putnam², Amy L. Petry², David S. Rosero¹

¹Iowa State University, ²University of Missouri

10:00 a.m. **Nonruminant Nutrition V: Break**

10:15 a.m. 163 **Release of Phosphorus and Inositol from Soybean Meal by Growing Pigs Fed Diets with Graded Levels of Microbial Phytase**

Andrea Paola P. Mallea Ortiz¹, Su A Lee¹, Hans H. Stein¹

¹University of Illinois

10:30 a.m. 164 **Modulation of Growth and Immune Function by Soy Saponins in Poultry**

Cameron S. White¹, Ryan N. Dilger¹

¹University of Illinois Urbana-Champaign

10:45 a.m. 165 **Validation of the Net Energy Estimate of Soybean Meal for Growing Pigs Under University and Commercial Conditions**

Gustavo Lima¹, Stephanie Lau¹, Nathan Vander Werff¹, Samuel F. Leiva¹, Colin Johnson¹, Nicholas K. Gabler², David S. Rosero¹

¹Iowa State University, ²Department of Animal Science, Iowa State University

11:00 a.m. 166 **Optimizing Soybean Meal Utilization: Pig Performance Unchanged at Lower lysine:ne Ratios**

Joseph G. Halbur¹, Jessica Lira-Silva¹, Ryan S. Samuel¹, Rafe Royall¹, Robert C. Thaler¹, Eric M. Weaver¹

¹South Dakota State University

11:15 a.m. 167 **Evaluation of Conventional and High Oleic Soybeans on Grow-finish Pig Performance**

Kierstan Lampe¹, Nicholas K. Gabler², Thomas A. Crome¹, Gene Gourley³, Leah Smith³, Emily Bruder³, Laura L. Greiner¹, David S. Rosero¹, Daniel B. Jones⁴, Dalton C. Humphrey¹

¹Iowa State University, ²Department of Animal Science, Iowa State University, ³Gourley Research Group, LLC, ⁴Archer Daniels Midland Company

11:30 a.m. 168 **Effects of Low and High Soybean Meal Inclusion on Growth Performance and Carcass Characteristics of Grow-finish Pigs**

Courtney Pohlen¹, Angel M. Martinez¹, Joseph G. Halbur¹, Rafe Royall¹, Eric M. Weaver¹

¹South Dakota State University

Nonruminant Nutrition VI: Grow-finish Pig Nutrition II

Chair: Jim Smith, J & K Smith Family Farms

8:15 AM - 11:45 AM

Ballroom A

8:15 a.m. 133 **Determination of Net Energy and Nitrogen Balance in Group-housed Pigs Fed Diets Containing Varying Levels of Fiber from Soybean Hulls**

Su A Lee¹, Hans H. Stein¹

¹University of Illinois

8:30 a.m. 134 **Effects of Former Food Products Inclusion on Nitrogen Balance and Nutrient Digestibility in Growing–finishing Pigs**

Giuseppe Bee¹, Roxana Elena Amarie², Marjeta Čandek-Potokar³

¹Agroscope, ²University of Pisa, ³Agricultural Institute of Slovenia

8:45 a.m. 135 **There Are Differences in Digestible Calcium Among 14 Sources of Calcium Carbonate Sourced from Latin America when Fed to Growing Pigs**

Diego Guerrero Huerta¹, Su A Lee¹, Hans H. Stein¹

¹University of Illinois

9:00 a.m. 136 **Evaluation of Lysine-to-energy Ratios on Performance and Profitability of Grow-finish Pigs**

Juan E. Gomez¹, Javier D. Chica¹

¹Iluma Alliance

9:15 a.m. 137 **Effects of Increasing Standardized Ileal Digestible valine:lysine Ratio on the Growth Performance of 21 to 40 kg Pigs**

Samantha A. Swanson¹, Grady Privett¹, Jordan T. Gebhardt¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Mike D. Tokach¹, Katelyn N. Gaffield¹, Robert D. Goodband¹

¹Kansas State University

9:30 a.m. 138 **Effects of Wheat Middlings Inclusion, Grinding, and Carbohydrase Supplementation in Isoenergetic Diets on Growth Performance and Carcass Characteristics of Grow-finish Pigs**

Pau Salgado-López¹, Jordi Bonet², Carme Soldevila², Jaume Coma²

¹Animal Nutrition and Welfare Service (SNIBA), Department of Animal and Food Science, Autonomous University of Barcelona, ²Vall Companys Group

9:45 a.m. 139 **Increasing the Dietary Lysine-to-Net Energy Ratio Improves Feed Efficiency of Pigs During the Growing Phase**

Camilo Cazetta Rodrigues Silva ¹, Danilo Marçal ², Eloá B. Bosso ¹, Ismael França ¹, Bárbara Thomazini Lopes ¹, Jaira de Oliveira ¹, Naiara Cristina dos Santos Silveira ¹, Eduarda Aparecida Santos ¹, Alini Mari Mari Veira ¹, Elisa Oliveira Frank ¹, Anderson Borba ¹, Luciano Hauschild ¹
¹São Paulo State University (Unesp), ²Universidade Brazil

10:00 a.m. **Nonruminant Nutrition VI: Break**

10:15 a.m. 140 **Evaluation of a Dietary Phosphorus Depletion-repletion Strategy on Grow-finish Pig Performance**

Grace C. McKibben ¹, David S. Rosero ¹, Austin Putz ¹, Nicholas K. Gabler ²
¹Iowa State University, ²Department of Animal Science, Iowa State University

10:30 a.m. 141 **Growth Performance and Carcass Characteristics of Grow-finishing Pigs Fed Organic Trace Minerals at Reduced Inclusion Rates**

Jamil E. G. Faccin ¹, Morgan Hart ¹, Sharlie A. Hansen ¹, Henrique S. Cemin ¹, Jose A. Soto ¹, Ernie L. Hansen ¹
¹Alltech

10:45 a.m. 142 **Effects of Crude Protein Level on Growth Performance of Late Finishing Pigs**

Madie Johnson ¹, Paloma Bello ¹, Mikayla Spinler ², Ethan Stas ¹, Kiah M. Berg ¹, Jake Koepke ¹, Emily Radcliffe ¹, Jon A. De Jong ¹, Joel M. DeRouchey ³, Mike D. Tokach ³
¹Pipestone Nutrition, ²Vita Plus, ³Kansas State University

11:00 a.m. 143 **Effects of a Feed Additive Premix Inclusion in diets of Varying Composition on metabolizable Energy, Standardized Ileal Digestibility of Amino Acids, and Growth Performance in Growing- finishing pigs**

Walter G. Friesen ¹, Diego A. Lopez ¹, Jason C. Woodworth ², Jordan T. Gebhardt ², Matt D. Miesner ², Chad B. Paulk ²
¹KANSAS STATE UNIVERSITY, ²Kansas State University

11:15 a.m. 144 **Effects of Sorting Frequency During Harvest on Pig Growth Performance, Morbidity and Mortality, and Carcass Characteristics**

Kayla A. Miller ¹, Omarh F. Mendoza ¹, Caleb M. Shull ¹
¹The Maschhoffs, LLC

11:30 a.m. 145 **Effects of Saccharomyces Yeast Postbiotics on Ileitis-affected Pig Growth Performance During Growing and Finishing**

Xiaohan Li ¹, Daniela A. Alambarrio ¹, Siara Zedonek ¹, John M. Gonzalez ¹, Matthew A. Vaughn ², Chad B. Paulk ³
¹University of Georgia, ²Puretein Bioscience LLC, ³Kansas State University

Nonruminant Nutrition IV: Gilt and Sow Nutrition II
Chair: Crystal Levesque, South Dakota State University
8:30 AM - 11:30 AM
205/206/207

8:30 a.m. 146 **Effect of Creep Feed Supplemented with Bacillus Subtilis on Growth Performance, Blood Inflammatory Cytokines, Gut Permeability, and Fecal Microbiome in Piglets**

Eva S. Safaie¹, Ashton Kelly², Chan Ho Kwon¹, Jannell A. Torres¹, Ji Hye Lee¹, Merlin D. Lindemann², Enid McKinley³, Samantha Hernandez³, Jeferson M. Lourenco¹, Young Dal Jang¹
¹University of Georgia, ²University of Kentucky, ³Arm & Hammer Animal and Food Production

8:45 a.m. 147 **Effect of Liquid Iron Supplementation via Milk Dosing System versus Intramuscular Injection on Post-weaning Growth and Hematological Parameters in Piglets**

Laia Sobrevia¹, Laia Blavi¹, Francesc González-Solé¹, Steven Laird¹, Beatriz Martin¹, Simon Tibble¹, Astrid Koppenol¹
¹AB Neo

9:00 a.m. 148 **FLAVOLAC® Enhances Milk Production, Casein Content, and Litter Growth Performance in Lactating Sows**

Anália Maria Ribeiro da Silva¹, Felipe Norberto Alves Ferreira², Clarice Speridião Silva Neta², Fabrício Almeida Santos², Marco Antônio Kunrath², Ana Caroline Rodrigues da Cunha², Renato Philomeno²
¹AGROCERES MULTIMIX, ²Agroceres Multimix

9:15 a.m. 149 **The Effect of a Cheese Co-product Included in Lactation And/or Offspring Nursery Diets on Nursery Performance**

Grady Privett¹, Diego A. Lopez², Joel M. DeRouche¹, Jason C. Woodworth¹, Robert D. Goodband¹, Katelyn N. Gaffield¹, Mike D. Tokach¹, Jordan T. Gebhardt¹
¹Kansas State University, ²KANSAS STATE UNIVERSITY

9:30 a.m. 150 **Effect of Increasing Feed Allocation or Soluble Fiber Inclusion in Late Gestation on the Performance and Behavior of Late Sows**

Cooper T. McAuley¹, Carley R. Hopkins², Jacob Knoy¹, Jason C. Woodworth¹, Robert D. Goodband¹, Jordan T. Gebhardt¹, Mike D. Tokach¹, Joel M. DeRouche¹, Jay S. Johnson², Clayton S. Chastain³, Eric Parr⁴, Matt Frizzo⁴, Katelyn N. Gaffield¹
¹Kansas State University, ²University of Missouri, ³Carthage Veterinary Services, ⁴Carthage Innovative Swine Solutions, LLC

9:45 a.m. 151 **Impact of Late-gestation Vitamin and Macro Mineral Supplementation on Sow Farrowing Outcomes**

Mark Knauer¹, Sara Hough², Jon R. Bergstrom², Jerry Purvis³
¹North Carolina State University, ²dsm-firmenich, ³Purvis Farms

10:00 a.m. **Nonruminant Nutrition IV: Break**

10:15 a.m. 152 **Dietary Calcium-to-phosphorus Ratio and Vitamin 25-OH-D₃ Effects on Growth and Bone Health in Developing Gilts**

Mark Knauer¹, Eduardo Beltranena¹, Sara Hough², Mike Rahe¹, Jazz Stephens¹, Ramon Diniz Malheiros¹, Eric van Heugten³, Jon R. Bergstrom²

¹North Carolina State University, ²dsm-firmenich, ³Department of Animal Science, North Carolina State University

10:30 a.m. 153 **Effects of Reduced Standardized Ileal Digestible Lysine During the Rearing Period on Growth, Body Composition, and Reproductive Performance of Gilts**

Biel Márquez¹, Núria Tous², Marta Fornós¹, Rosil Lizardo³, Zaira Pardo², Jennifer Vazquez³, Josep Gasà¹, David Solà-Oriol¹

¹Animal Nutrition and Welfare Service (SNIBA), Department of Animal and Food Science, Autonomous University of Barcelona, ²Institute of Agrifood Research and Technology (IRTA), ³IRTA Animal Nutrition

10:45 a.m. 154 **Parenteral Iron Supplementation in Prolific Sows Post-weaning: A Dose-response Study**

Katlyn A. McClellan¹, Darcy Pamulaklakin¹, Eric M. Weaver¹

¹South Dakota State University

11:00 a.m. 155 **Assessing the Prevalence of Anemia and Its Association with Reproductive Performance and Mortality Risk in Prolific Sows on a High-mortality Farm**

Abigail L. Morse¹, Elle Ploeger¹, Katlyn A. McClellan¹, Eric M. Weaver¹

¹South Dakota State University

11:15 a.m. 156 **Effects of Dietary Standardized Ileal Digestible Lysine Level in Lactation Diets on Sow and Litter Performance and Subsequent Reproductive Performance**

Diego A. Rodriguez¹, Caleb M. Shull¹, Omarh F. Mendoza¹, Katie M. Brown¹, Nick Boehl¹

¹The Maschhoffs, LLC

Ruminant Nutrition IV: Early Life Nutrition and Gastrointestinal Health

Chair: Derek Brake, University of Missouri

10:30 AM - 11:45 AM

213/214

10:30 a.m. 169 **Characterization of fecal pH in commercial finishing cattle relative to feeding time**

Madison L. Bemisderfer¹, Cody Schneider², Haley E. Larson¹

¹Kansas State University Olathe, ²Cornbelt Livestock Services

10:45 a.m. 170 **Evaluating Impact of Early Life Nutrition on Finishing Phase Performance & Carcass Traits in Beef x Dairy Calves**

Garland R. Dahlke¹, Denise R. Schwab¹, Gail Carpenter¹

¹Iowa State University

11:00 a.m. 171 **Effect of Starch Inclusion Level in Calf Starter Diet On carryover performance and Gastrointestinal function in Beef-dairy Cross Calves during the Finishing Phase**

Liliana M. Rivas¹, Phillip A. Lancaster¹, William A. Brown², Robert L. Larson³, Raghavendra G. Amachawadi¹

¹Beef Cattle Institute, ²Kansas State University, ³Beef Cattle Institute,

11:15 a.m. 172 **Time Postpartum and Nutritional Plane Affect Colostrum and Transition Milk Trace Minerals in Primiparous Beef Females**

Allison M. Meyer¹, Colby A. Redifer¹, Abigail R. Rathert-Williams¹

¹Division of Animal Sciences, University of Missouri

11:30 a.m. 173 **Characterization of the Bacterial Communities Associated with 180-day-old Calf Fetuses and Their Dams Fed High-concentrate or High-forage Diets to Alter Maternal Gut Microbiome**

Kell Helmuth¹, Godson Aryee¹, Devin B. Holman², Justine Kilama¹, Joel S. Caton¹, Kendall C. Swanson¹, Carl R. Dahlen¹, Samat Amat¹

¹North Dakota State University, ²Lacombe Research and Development Centre

Nonruminant Nutrition Symposium: The Science and Commercial application of Soybean Meal in Today's Pig Diets

Chair: Casey Bradley, Sunswine Group

1:00 PM - 5:00 PM

Ballroom A

1:00 p.m. **Nonruminant Nutrition Symposium Introduction**

1:05 p.m. 174 **History of the Corn-soy Diet**

Robert A. Easter¹

¹University of Illinois Urbana-Champaign

1:20 p.m. 175 **Four Pillars of Soybean Meal's Unique Value to Swine Nutrition and Health**

R. Dean Boyd¹, Aaron M. Gaines²

¹Animal Nutrition Research, ²Ani-Tek

1:50 p.m. 176 **New Knowledge on Soybean Meal and Practical Implications to Feed Formulation**

Aaron M. Gaines¹, R. Dean Boyd²

¹Ani-Tek, ²Animal Nutrition Research

2:10 p.m. 177 **Modeling the Economic Value of Soybean Meal in Swine Diets: Development of a Digital Calculator for Dynamic Market Conditions**

David S. Rosero¹, Bart Borg²

¹Iowa State University, ²United Soybean Board

3:00 p.m. **Nonruminant Nutrition Symposium Break**

3:15 p.m. 178 **Main Factors Affecting the Nutritional Value of Soybean Meals. Importance of Quality Control and Country of Origin of the Soybeans**

Gonzalo Mateos González¹, Rosa Lázaro¹, Guillermo Talegón¹, Lourdes Cámara¹

¹Universidad Politécnica de Madrid

3:45 p.m. 179 **Evaluation of U.S. Soybean Meal Quality and Consistency and Determination of Best Analytical Practices**

Katelyn N. Gaffield¹, Sierra M. Collier¹, Jordan T. Gebhardt¹, Robert D. Goodband¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Mike D. Tokach¹

¹Kansas State University

4:15 p.m. 180 **Why a New Net Energy Value for Soybean Meal Fed to Pigs Is Needed**

Hans H. Stein¹

¹University of Illinois

4:45 p.m. 181 **Future Research Opportunities for Soybean Meal in Swine Production**

Nathan Augspurger¹, David Holzgraefe²

¹United Soybean Board, ²Holzgraefe Innovative Services, LLC

Poster Session 5

11:45 AM - 12:30 PM

Grand Ballroom Pre-Function

11:45 a.m. PS5-1 **Effects of Dietary Standardized Ileal Digestible Lysine on Growth Performance and Economical Outcomes of Immunologically-castrated Male Pigs Weighing 81 to 111 kg**

Benjamin M. Bohrer¹, Blaine Hansen², Jose Landero³, Malachy Young³, Leanne Van De Weyer⁴, Alvaro Aldaz⁴, Kimberly A. Vonnahme⁴

¹The Ohio State University, ²BCH Consulting LLC, ³Gowans Feed Consulting, ⁴Zoetis Inc.

11:45 a.m. PS5-2 **Effects of Dietary Standardized Ileal Digestible Lysine on Growth Performance and Economical Outcomes of Immunologically-castrated Male Pigs Weighing 106 to 138 kg**

Benjamin M. Bohrer¹, Blaine Hansen², Jose Landero³, Malachy Young³, Leanne Van De Weyer⁴, Alvaro Aldaz⁴, Kimberly A. Vonnahme⁴

¹The Ohio State University, ²BCH Consulting LLC, ³Gowans Feed Consulting, ⁴Zoetis Inc.

11:45 a.m. PS5-3 **Effects of Dietary Standardized Ileal Digestible Lysine on Growth Performance and Economical Outcomes of Intact Male Pigs Weighing 26 to 42 kg**

Benjamin M. Bohrer¹, Blaine Hansen², Jose Landero³, Malachy Young³, Leanne Van De Weyer⁴, Alvaro Aldaz⁴, Kimberly A. Vonnahme⁴

¹The Ohio State University, ²BCH Consulting LLC, ³Gowans Feed Consulting, ⁴Zoetis Inc.

11:45 a.m. PS5-4 **Effects of Dietary Standardized Ileal Digestible Lysine on Growth Performance and Economical Outcomes of Intact Male Pigs Weighing 41 to 58 kg**

Benjamin M. Bohrer¹, Blaine Hansen², Jose Landero³, Malachy Young³, Leanne Van De Weyer⁴, Alvaro Aldaz⁴, Kimberly A. Vonnahme⁴

¹The Ohio State University, ²BCH Consulting LLC, ³Gowans Feed Consulting, ⁴Zoetis Inc.

11:45 a.m. PS5-5 **Effects of Dietary Standardized Ileal Digestible Lysine on Growth Performance and Economical Outcomes of Intact Male Pigs Weighing 59 to 81 kg**

Benjamin M. Bohrer¹, Blaine Hansen², Jose Landero³, Malachy Young³, Leanne Van De Weyer⁴, Alvaro Aldaz⁴, Kimberly A. Vonnahme⁴

¹The Ohio State University, ²BCH Consulting LLC, ³Gowans Feed Consulting, ⁴Zoetis Inc.

11:45 a.m. PS5-6 **Basal Ileal Endogenous Phosphorus Losses in Swine Is Influenced by Age**

José A. L. Barbosa¹, Hélio Moreira Junior¹, Amanda Gorrosterrazú¹, Dener Oliveira Moreira¹, Marcos L. P. L. P. Tsé², Felipe Dilelis², Urbano S. Santos Ruiz²

¹University of São Paulo, ²São Paulo State University

11:45 a.m. PS5-7 **Evaluation of Trypsin Inhibitor Unit Level with or Without the Addition of Protease and an In-feed Acidifier on Nursery Pig Growth Performance, Fecal Dry Matter, and Nutrient Digestibility**

Sierra M. Collier¹, Skyler Ward¹, Katelyn N. Gaffield¹, Robert D. Goodband¹, Mike D. Tokach¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Jon R. Bergstrom², Hari B. Krishnan³, Jordan T. Gebhardt¹

¹Kansas State University, ²dsm-firmenich, ³USDA-Agricultural Research Service

11:45 a.m. PS5-8 **Effects of a *Bacillus*-based Feed Additive in Nursery Pig Diets Containing Low or High Levels of Soybean Meal**

Ty Kim¹, Grady Privett¹, Pau Salgado-Lopez¹, Mike D. Tokach¹, Joel M. DeRouchey¹, Jason C. Woodworth¹, Robert D. Goodband¹, Katelyn N. Gaffield¹, Thomas E. Weber², Kale S. Causemaker², Brooke E. Anderson², Dwight Shawk³, Noah Gainey³, Veronica Polniak³, Jordan T. Gebhardt¹

¹Kansas State University, ²KENT Nutrition, ³Hord Family Farms

11:45 a.m. PS5-9 **Digestible and Metabolizable Energy Concentrations of Various Sources of Fish Meal Fed to Nursery Pigs**

Donghyeon Lee¹, Beob Gyun Kim¹

¹Konkuk University

11:45 a.m. PS5-10 **Evaluation of Various Filter Bags for in vitro Digestion Method for Estimating the Ileal Digestibility of Crude Protein in Pigs**

Donghyeon Lee¹, Yoon Soo Song¹, Beob Gyun Kim¹

¹Konkuk University

11:45 a.m. PS5-11 **Effects of Supplementing Blends of Probiotics on Performance of Nursery Pigs Raised Under Low Sanitary Conditions**

Trevor Lutz¹, Emily Fruge¹, Matt Asmus¹, Kristy Dorton¹, Gary Reznik¹, Jon Droegmiller¹, Yuan-Tai Hung²

¹Devenish Nutrition - North America, ²Institute for Feed Education & Research

11:45 a.m. PS5-12 **Effects of Phytogetic and Postbiotic Feed Additives on Nursery Pig Performance**

Molly L. McGhee¹, Sabrina B. May¹, Brooke Smith¹, Amanda Elsbernd¹, Maud Le Gall¹, Wendeline Wouters¹

¹Cargill Animal Nutrition & Health

11:45 a.m. PS5-13 **Evaluation of Two Specialty Corn Protein-based Products on Growth Performance and Fecal Dry Matter of Nursery Pigs**

Tomas Porcel de Peralta¹, Mike D. Tokach¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Robert D. Goodband¹, Katelyn N. Gaffield¹, Jordan T. Gebhardt¹, Julia Holen², Haley Schwecke², Alyssa Betlach³, Keith Mertz⁴, John Patience⁵

¹Kansas State University, ²Swine Vet Center, ³Swine Veterinary Center, ⁴Cargill Starches, Sweeteners, & Texturizers, ⁵Oxford Nutrition Consulting LLC

11:45 a.m. PS5-14 **Increasing Dietary Standardized Ileal Digestible Arginine to Lysine Ratio Augments Gut Structure in Nursery Pig**

Lillian Jeffers¹, Alex Outlaw¹, Paulo Azevedo², Jonas McAbee¹, Haejin Kim¹, David Clizer³, Keith D. Haydon³, Jenna Bayne¹, Samuel J. Rochell¹, Marko Rudar¹

¹Auburn University, ²Auburn Univeristy, ³CJ Bio

11:45 a.m. PS5-15 **Effect of Late-gestation Micronutrient Supplementation on Sow Hemoglobin Concentration and Farrowing Outcomes**

Fernando Soler¹, Hayden Williams², Ximena Paz², Denny M. McKilligan³, Eric van Heugten⁴
¹Department of Animal Science, North Carolina State University, ²The Hanor Company, ³Tech Mix, ⁴Department of Animal Science, North Carolina State University

11:45 a.m. PS5-16 **Practical Evaluation of Recycled Phosphorus from Swine Lagoon Sludge in Nursery Pig Diets**

Fernando Soler¹, Sarah Rubio², Izadora B. Kuneff², Mahmoud Sharara³, Chris Hopkins⁴, Eric van Heugten²

¹Department of Animal Science, North Carolina State University, ²Department of Animal Science, North Carolina State University, ³Department of Biological and Agricultural Engineering, North Carolina State University, ⁴Prestage Department of Poultry Science, North Carolina State University

11:45 a.m. PS5-17 **How Does an Enrichment Toy at the Time of Mixing Sows Support Oral-nasal-facial Behaviors?**

Deidra Bebb¹, Suzanne T. Millman¹, Ulrike Genschel¹, Rebekah Scott¹, Karl Kerns¹, Anna K. Johnson¹

¹Iowa State University

11:45 a.m. PS5-18 **Impact of Hypo- or Hyper-methylating Diets During Early Placental Establishment on Fetal and Placental Development at 46- and 107- days Gestation**

Lea A. Rempel¹, Alexandria P. Snider¹, Clay A. Lents¹, Oliver T. William¹, Hiruni R. Wijesena¹, Jeremy R. Miles¹

¹USDA, U.S. Meat Animal Research Center

11:45 a.m. PS5-19 **Predictive Value of Parity One Body Condition for Sow Retention and Lifetime Reproductive Output Through the Third Parity**

Ricardo Miranda Garcia¹, Priscila Theil¹, Maicon Borile¹, Rafael Oliveira¹, Guilherme Rehder¹, Jose Fisher², Pedro E. Urriola³, Sudario Roberto Silva Junior⁴

¹Cargill Animal Nutrition and Health, ²Agropecuária Bressiani, Brazil, ³University of Minnesota, Department of Animal Science, ⁴University of Minnesota

Poster Session 6
12:45 PM - 1:30 PM
Grand Ballroom Pre-Function

12:45 p.m. PS6-1 **Exploring How Practicing Swine Veterinarians Define Swine Welfare in the United States**

Jayden Lawrence¹, Anna K. Johnson¹, Nicholas K. Gabler², Fally Masambuka-Kanchewa³,
Monique Pairis-Garcia⁴, Gustavo Donoso⁴

¹Iowa State University, ²Department of Animal Science, Iowa State University, ³Iowa State,
⁴North Carolina State University

12:45 p.m. PS6-2 **Olive Bioactives Mitigate Oxidative Stress in Weaned Piglets Exposed to a Social Stress Challenge**

Sergi López-Vergé¹, Emily Otto-Tice², Jose J. Pastor¹

¹Lucta SA, ²Lucta US

12:45 p.m. PS6-3 **Social Network Analysis of Tail-biting Interactions Among Growing-finishing Pigs with Intact Tails Housed in Two Group Sizes**

Yuzhi Li¹, Courtney Archer², Storey L. Forster³, Ty B. Schmidt³, Benny E. Mote³, Jon Anderson⁴,
Lee J. Johnston¹

¹West Central Research and Outreach Center, University of Minnesota, ²Department of Animal
Science, University of Minnesota, ³Department of Animal Science, University of Nebraska -
Lincoln, ⁴Division of Science and Mathematics, University of Minnesota - Morris

12:45 p.m. PS6-4 **Influence of Dietary Fat and Growth Promotants on Mobility and Gait in Finished Cattle**

Ruth Woiwode¹, Samuel Waldman¹

¹University of Nebraska-Lincoln

12:45 p.m. PS6-5 **Early Farrowing Pace and Parturition Outcomes**

Mark Knauer¹, Anna Brooks Murray¹

¹North Carolina State University

12:45 p.m. PS6-6 **Effect of Dietary Calcium-to-phosphorus Ratio, Vitamin 25-OH-D₃, Litter of Origin, and Growth Rate on Serum Vitamin 25-OH-D₃ Levels of Gilts**

Mark Knauer¹, Eduardo Beltranena¹, Sara Hough², Mike Rahe¹, Ramon Diniz Malheiros¹, Jon
R. Bergstrom²

¹North Carolina State University, ²dsm-firmenich

12:45 p.m. PS6-7 **Modeling Feed Intake in Lactation Sows Using Temperature and Humidity Covariates**

Qianqian Huang¹, Maria Victoria Souza¹, Hyatt Frobose², Hinayah Rojas Oliveira¹, Allan P.
Schinckel¹

¹Purdue University, ²Jyga Technologies - GESTAL

12:45 p.m. PS6-8 **Effect of Enterotoxigenic Escherichia coli F18 Inoculum Concentration on Clinical Response Following Orogastric Challenge in Nursery Pigs**

Jessica Smallfield¹, Jordan T. Gebhardt¹, Mike D. Tokach¹, Jason C. Woodworth¹, Joel M. DeRouche¹, Robert D. Goodband¹, Katelyn N. Gaffield¹, Raghavendra G. Amachawadi², Harith Salih¹, Taghreed S. Mahmood¹

¹Kansas State University, ²Beef Cattle Institute

12:45 p.m. PS6-9 **Effects of Feeding Increasing Levels of a Proprietary Preservative and Flow-agent Blend in Diets Containing Deoxynivalenol Contaminated Distillers Dried Grains with Solubles**

Tyler Chevalier¹, Julie Salyer¹, James Jolliff¹

¹Kalmbach Feeds, Inc.

12:45 p.m. PS6-10 **The Effects of Supplemental Brewers Yeast on Growth Performance of Nursery Pigs**

Rachel L. Cole¹, Brooke E. Anderson¹, Kale S. Causemaker¹, Thomas E. Weber¹, Gene Gourley²

¹KENT Nutrition, ²Gourley Research Group, LLC

12:45 p.m. PS6-11 **Effect of Insoluble and Soluble Fiber on Growth Performance, Nutrient Digestibility and Faecal Scores in Weaning Pigs**

Se Yeon Jang¹, Zhenyu Ding¹, Seungjin Yun¹, In Ho Kim¹

¹Dankook University, Department of Animal Biotechnology

12:45 p.m. PS6-12 **Effects of Different Feeding Strategies on Growth Performance, Meat Quality in Growing–finishing Pigs**

Se Yeon Jang¹, Tian Xian Li¹, Seungjin Yun¹, In Ho Kim¹

¹Dankook University, Department of Animal Biotechnology

12:45 p.m. PS6-13 **A Novel Feeding Strategy: Effects of Reduced Amylose to Amylopectin Ratio in Low-protein Diets on Growth Performance and Gut Health in Nursery Pigs**

Juho Lee¹, Federico Correa², Francesco Palumbo³, Silvia Bencivenni², Paolo Trevisi⁴, Diana Luise²

¹Department of Agricultural and Food Sciences, University of Bologna, Bologna, ²University of Bologna, Bologna, ³Department of Agro-Food Sciences and Technologies, University of Bologna, Bologna, Italy, ⁴Department of Agricultural and Food Science (DISTAL) - University of Bologna

12:45 p.m. PS6-14 **Effects of Pig Weaning Weight and Sex on Growth Performance, Fecal Score, and Blood Antioxidant Capacity in Early Nursery Period**

Ji Hye Lee¹, Shelby Greer¹, Chan Ho Kwon¹, Eva S. Safaie¹, Jannell A. Torres¹, Yoon Soo Song¹, Young Dal Jang¹

¹University of Georgia

12:45 p.m. PS6-15 **Impact of Different Protein Sources and Additional Crystalline Amino Acids on Nitrogen Balance and Concentrations of Energy in Diets Fed to Growing Pigs**

Jimena A. Ibagón¹, Su A Lee², Hans H. Stein²

¹University of Illinois at Urbana-Champaign, ²University of Illinois

12:45 p.m. PS6-16 **Effects of Copper Feeding Strategy on Growth Performance of Nursery Pigs**

Samantha A. Swanson¹, Jason C. Woodworth¹, Mike D. Tokach¹, Joel M. DeRouchey¹, Robert D. Goodband¹, Katelyn N. Gaffield¹, Jordan T. Gebhardt¹, Matt Einarson²

¹Kansas State University, ²SAM HPRP Chemicals, Inc. DBA SAM Nutrition

12:45 p.m. PS6-17 **The Ileal Microbiota Profile Was Altered by Diquat-induced Oxidative Stress in Growing Pigs**

Emmanuel O. Oladejo¹, Peixin F. Fan², John K. Htoo³, Jean F. Feugang⁴, SHENGFA F. LIAO⁴

¹Louisiana Tech University, USA, ²Mississippi State University, USA, ³Evonik Operations GmbH,

⁴Mississippi State University

12:45 p.m. PS6-18 **What Animal-based Outcomes Exclude Gilts from Entering the Breeding Herd?**

Deidra Bebb¹, Suzanne T. Millman¹, Ulrike Genschel¹, Karl Kerns¹, Anna K. Johnson¹

¹Iowa State University

Swine Translational I - Sponsored by Zoetis

Chair: Erin Posey, USDA/APHIS, National Veterinary Services Laboratories

1:30 PM - 4:15 PM

Ballroom C

1:30 p.m. 182 **Identifying factors to Predict Sows Longevity in Commercial Farms**

Biel Márquez¹, Marta Fornós¹, Carme Soldevila², Mercè Farré³, Josep Gasa¹, David Solà-Oriol¹

¹Animal Nutrition and Welfare Service (SNIBA), Department of Animal and Food Science, Autonomous University of Barcelona, ²Vall Companys Group, ³Department of Mathematics, Area of Statistics and Operations Research, Autonomous University of Barcelona

1:45 p.m. 183 **Blood Biomarker Trends in Gilts Followed Through Three Parities**

Ursula M. McCormack¹, Grady Privett², Jon R. Bergstrom¹, Jason C. Woodworth², Jordan T. Gebhardt², Katelyn N. Gaffield², Robert D. Goodband², Mike D. Tokach², Joel M. DeRouchey²

¹dsm-firmenich, ²Kansas State University

2:00 p.m. 184 **The Effect of Controlling Feed Allowance in Late Lactation on Sow and Litter Performance**

Dalton Obermier¹, Jeremy Robertson², Hyatt Frobose³

¹JYGA Technologies Inc., ²Brenneman Pork, ³Jyga Technologies - GESTAL

2:15 p.m. 185 **Effects of Increased Feed Allocation from Breeding to Day 50 of Gestation on Sow, Litter, and Subsequent Reproductive Performance of Sows Differing in Body Condition at Weaning**

Jorge Estrada¹, Eric Parr¹, Jeremy Perez², Caleb J. Grohmann¹, Matt Frizzo¹

¹Carthage Innovative Swine Solutions, LLC, ²Pig Improvement Company (PIC) - North America

2:30 p.m. 186 **Defining Lactation Feed Efficiency Classifications Through Milk Production and Sow Body Composition Dynamics in Modern Gilts and Sows**

Tricia Veldhuizen¹, Hyatt Frobose², Jeremy Robertson³, Lane Higbie⁴, Dalton Obermier⁵, Danielle Wilson-Wells⁶, Luis E. Zaragoza⁶, Isaiah T. Spath⁶, Dan Hamilton⁶, Jeff Altfillisch⁶, Carine M. Vier⁶, Weasley A. Orlando⁷

¹Iowa State University, ²Jyga Technologies - GESTAL, ³Brenneman Pork, ⁴Blinn College, ⁵JYGA Technologies Inc., ⁶PIC, ⁷Genus PIC

2:45 p.m. **Swine Translational I Break**

3:00 p.m. 187 **Impact of Aggression and Social Rank at Mixing on Stall Utilization and Subsequent Farrowing Performance in Free Access Stall Systems**

Simon A. Collier¹, Andrea M. Luttman¹, Catherine W. Ernst¹

¹Michigan State University

3:15 p.m. 188 **Comparative Study of Healicin-abf and Alu-mend Sprays in the Treatment of Sow Shoulder Sores**

Brian Payne¹, Emma Brewer², Luci Reich³, Dylan Shaffer¹

¹Veterinary Pharmaceutical Solutions, ²Kansas State University, ³The Maschhoffs

3:30 p.m. 189 **Evaluating Working Boar Body Condition Using Caliper**

Jiyao Guo¹, Amanda Middleton², Jamie Hundley², Kevin Eggers², Jordi Camp Montoro², Carine M. Vier², Wayne R. Cast¹, Ning Lu¹, Weasley A. Orlando¹, Steve Dritz²

¹Genus PIC, ²PIC

3:45 p.m. 190 **What the Survey Says: Characterization of North American Boar Studs**

Clara K. Henry¹, Timothy J. Safranski¹

¹University of Missouri

4:00 p.m. 191 **Factors Associated with Gilt Retention in Breeding Herds Under one Production System in the Midwestern United States**

Elly Kirwa¹, Cesar A A Moura², Swaminathan Jayaraman¹, Rafael R. da Rosa Ulguim¹, Gustavo Silva³

¹IOWA STATE UNIVERSITY, ²Iowa Select Farms, ³Iowa State University

Animal Behavior, Health and Well-being

Chair: Andrea Luttman, Michigan State University; Abigail Tillotson, Prairie Swine Centre

1:30 PM - 5:15 PM

210/211/212

1:30 p.m. 192 **Characterization of Microbial Communities and Bacterial Markers of PRRSV-positive and -negative Pigs**

Huyen T. Tran ¹, Bipin Rimal ¹, Jessica Reestman ², Dan Grum ¹, Ellen Davis ³

¹Purina Animal Nutrition, ²NutraBlend, ³Land O Lakes

1:45 p.m. 193 **Evaluating the Effects of Maternal Stimuli and Nutritional Supplementation on Weaned Piglet Performance and Behavior**

Jordan M. Aguilar ¹, Bianca F. Metallo ¹, Emily M. Webberson ¹, Nathaniel J. Hall ¹, Edgar O. Aviles-Rosa ¹

¹Texas Tech University

2:00 p.m. 194 **Can Oxidizing Air Purification Technology Improve Air Quality, Pig Health, and Pig Performance During the Nursery Phase of Production?**

Keara J. Leong-Machielse ¹, Jennifer M. Young ¹, Xiaoyu Feng ¹, Samat Amat ¹, Christopher J. Byrd ¹

¹North Dakota State University

2:15 p.m. 195 **Effect of Stocking Density and Mobile Shelter on Excretion and Rooting Behavior of Outdoor Pigs in the Colombian High Plain**

Andres F. Bolivar Sierra ¹, Sergio Parra Gonzalez ², Ivan E. Mariño Guerrero ², Arley Medina Cuniche ², Kevin A. Peña Aldana ², Valeria Pacheco Sierra ², Victor L. Hurtado Nery ², Myriam C. Yunda Romero ²

¹South Dakota State University, ²Universidad de los Llanos

2:30 p.m. 196 **Evaluating Production and Transport Factors of Transit Loss in Market Hogs and Identifying High-Risk Loads Using Machine Learning**

Junhao Huang ¹, Jordan T. Gebhardt ², Mateus De Castro Duarte Cardoso ³, Jackson C. Sterle ³, Heitor De Avila ³, Edison Magalhaes ³

¹Universitat Autònoma de Barcelona, ²Kansas State University, ³Iowa State University

2:45 p.m. 197 **Data-driven Forecasting of Nursery Piglet Mortality in Commercial Swine Systems**

Mateus De Castro Duarte Cardoso ¹, Tinh Tien ¹, Jackson C. Sterle ¹, Daniel Linhares ¹, Edison Magalhaes ¹

¹Iowa State University

3:00 p.m. 198 **Machine Learning Prediction of Daily Feed Intake in Lactating Sows Using Biological, Behavioral and Environmental Data**

Maria Victoria Souza ¹, Alex Trentin ¹, Qianqian Huang ¹, Hinayah Oliveira ¹, Hyatt Frobose ², Allan P. Schinckel ¹

¹Purdue University, ²Jyga Technologies - GESTAL

3:15 p.m. **Animal Behavior, Health and Well-being Break**

3:30 p.m. 199 **Using a Voluntary Walking Test to Evaluate Perforated Rubber-matted and Concrete Flooring Under Different Conditions for Gestating Sows and Gilts**

Monica Li ¹, Abigail I. Tillotson ², Martyna Lagoda ¹, Jen-Yun Chou ²

¹University of Saskatchewan, ²Prairie Swine Centre

3:45 p.m. 200 **Using Retrospective Data to Implement a Mortality Surveillance System for Growing Pigs**

Jackson C. Sterle ¹, Mafalda Mil-Homens ¹, Mateus De Castro Duarte Cardoso ¹, Daniel Linhares ¹, Gustavo Silva ¹, Edison Magalhaes ¹

¹Iowa State University

4:00 p.m. 201 **Evaluating the Effect of Occupational and Nutritional Enrichment on Sheep Behavior**

Emily M. Webberson ¹, Edgar O. Aviles-Rosa ¹, Ramya Vallabhaneni ¹

¹Texas Tech University

4:15 p.m. 202 **Investigating the Impact of Sire Genetic Merit in Beef on Dairy Cattle**

Annika Donlick ¹, Jamie Courter ¹

¹Universtiy of Missouri

4:30 p.m. 203 **Livestock Inspections Facilitate Monitoring of the Geographic Spread of Native and Invasive Tick Species**

Teresa L. Steckler ¹, Chris Stone ¹, Lance Jones ¹, Joshua C. McCann ¹, Holly Tuten ¹, Kylee Oglesby ¹

¹University of Illinois

4:45 p.m. 204 **Seasonality of Bovine Respiratory Disease (BRD) and Mitigation Techniques Used in Receiving Beef Cattle in the Last 10 Years: A Meta-analysis**

Robin A. Cheek ¹, Elizabeth B. Kegley ¹, Jeremy G. Powell ¹, Samantha M. Howe ¹

¹University of Arkansas

5:00 p.m. 205 **The Impact of Maternal Bovine Appeasing Substance on Behavior of Beef Heifers at Fixed Time AI**

Katlyn Branstetter ¹, Elizabeth Walker ¹, William McClain ¹, Rodigo Bicalho ², Adam McGee ¹

¹Missouri State University, ²Fera Diagnostics and Biologicals

Nonruminant Nutrition VII: Trace Mineral Nutrition in Nursery Pigs

Chair: Pengcheng (Allan) Xue, Devenish

1:45 PM - 5:00 PM

205/206/207

1:45 p.m. 206 Microencapsulated Zinc Oxide Reduces Zinc Excretion and Feed Cost While Improving Gut Health and Growth Performance in Nursery Pigs

Olufemi O. Babatunde¹, Glenmer B. Tactacan¹, Marcia de S Vieira¹, Ludovic Lahaye¹, Chris Gwyn¹, Mariana L. de Moraes¹

¹Jefo Nutrition Inc

2:00 p.m. 207 Effect of Two Injectable Iron Sources and Three Administration Programs on Growth Performance and Hemoglobin Levels in Nursing Pigs

Ginevra Piazza¹, Julian Arroyave², Jason C. Woodworth², Katelyn N. Gaffield², Mike D. Tokach², Robert D. Goodband², Joel M. DeRouchey², Jordan T. Gebhardt²

¹University of Parma, ²Kansas State University

2:15 p.m. 208 The Effects of Dietary Iodine Supplementation on Nursery Pig Growth Performance

Morgan Hart¹, Henrique S. Cemin¹, Jose A. Soto¹, Ernie L. Hansen¹, Jamil E. G. Faccin¹, Sharlie A. Hansen¹

¹Alltech

2:30 p.m. 209 Effects of various combinations of zinc and copper sources on ATP concentrations and antioxidant response in different tissues of post-weaned piglets

Danyel Bueno Dalto¹, Jose Vitor Silva Duarte², Jiovani Sergio Bee Tubin¹, Isabelle Audet¹

¹Agriculture and Agri-Food Canada, ²Agriculture and Agri-Food Canada / University of Saskatchewan

2:45 p.m. 210 Effect of Increasing Dietary Iodine on Nursery Pig Growth Performance

Tomas Porcel de Peralta¹, Jordan T. Gebhardt¹, Mike D. Tokach¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Robert D. Goodband¹, Katelyn N. Gaffield¹

¹Kansas State University

3:00 p.m. 211 Effects of Different Pharmacological Zinc Withdrawal Strategies on Growth Performance of Nursery Pigs

Joana Magoga¹, Jordan T. Gebhardt¹, Robert D. Goodband¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Katelyn N. Gaffield¹, Mike D. Tokach¹

¹Kansas State University

3:15 p.m. Nonruminant Nutrition VII: Break

3:30 p.m. 212 **Effects of Increasing Lactose with or Without Pharmacological Levels of Zinc on Performance, Fecal Dry Matter, and Plasma Zinc Concentration in Nursery Pigs**

Joana Magoga¹, Julian Arroyave¹, Jordan T. Gebhardt¹, Robert D. Goodband¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Katelyn N. Gaffield¹, Mike D. Tokach¹

¹Kansas State University

3:45 p.m. 213 **The effect of levels and of various combinations of Zn and Cu sources on their homeostasis and gene expression in different tissues of post-weaned piglets**

Jiovani Sergio Bee Tubin¹, Jose Vitor Silva Duarte², Isabelle Audet¹, Danyel Bueno Dalto¹

¹Agriculture and Agri-Food Canada, ²Agriculture and Agri-Food Canada / University of Saskatchewan

4:00 p.m. 214 **Pharmacological Zinc Oxide Reduces F18 Enterotoxigenic Escherichia coli Attachment in Weanling Pigs**

Elizabeth M. Due¹, Eric R. Burrough², Nicholas K. Gabler³

¹Iowa State University, ²Department of Veterinary Diagnostic and Production Animal Medicine, Iowa State University, ³Department of Animal Science, Iowa State University

4:15 p.m. 215 **Zinc Source and Copper Level in Low Acid-binding Capacity Diets for Nursery Pigs as Alternatives to Pharmacological Zinc Oxide**

Juho Lee¹, Ron Aldwin S. Navales², Mike D. Tokach³, Jason C. Woodworth³, Joel M. DeRouchey³, Robert D. Goodband³, Katelyn N. Gaffield³, Jordan T. Gebhardt³, Alessandra Rigo Monteiro⁴, Yron Joseph Y. Manaig⁴, Paolo Trevisi⁵

¹Department of Agricultural and Food Sciences, University of Bologna, Bologna, ²Cargill Philippines, Inc., ³Kansas State University, ⁴ANIMINE, ⁵Department of Agricultural and Food Science (DISTAL) - University of Bologna

4:30 p.m. 216 **Does Selenium Source Affect Nursery Pig Performance and Livability?**

Jamil E. G. Faccin¹, Morgan Hart¹, Henrique S. Cemin¹, Sharlie A. Hansen¹, Jose A. Soto¹, Ernie L. Hansen¹

¹Alltech

4:45 p.m. 217 **Influence of Alternative Additives to Zinc Oxide on the Bacterial Community Composition and Intestinal Morphology of Weaned Piglets**

Lucimauro Fonseca¹, Claudia Braga Pereira Bento², Lutecia Rigueira Medina¹, Maria Rogervânia Farias¹, Wender Vieira Fernandes¹, Jose A. Soto³, Adriana Helena Nascimento⁴, Melissa Izabel Hannas¹

¹UFV, ²UFVJM, ³Alltech, ⁴Alltech do Brasil

**Physiology Symposium: Recent Progress in the Area of Stress and Immunity Research, from
Basis to Applied Concepts**

Chair: Kolapo Ajuwon, Purdue University

1:45 PM - 5:00 PM

213/214

1:45 p.m. **Physiology Symposium Introduction**

1:50 p.m. 218 **Genomic Strategies for Improving Thermotolerance in Pigs and Dairy Cattle:
Progress and Prospects**

Luiz F. Brito ¹

¹Purdue University

2:25 p.m. 219 **Digestive Physiology of Pigs (DPP) Lecture: Impact of Heat Stress on Gut and
Systemic Health in Animal Production: Novel Molecular Pathways**

Sami Dridi ¹

¹University of Arkansas

3:00 p.m. 220 **The Impact of Inflammation in Heat-stressed Dairy Cattle**

Agustin G. Rius ¹

¹The University of Tennessee

3:35 p.m. **Physiology Symposium Break**

3:50 p.m. 221 **Integrating physiology and genomics to improve heat stress resilience in
pigs**

Jay S. Johnson ¹

¹University of Missouri

4:25 p.m. 222 **Heat Stress and Gut Integrity in Monogastrics: Past Lessons, Present
Challenges, and Future Directions**

Sarah C. Pearce ¹

¹USDA-ARS

**Ruminant Nutrition Symposium: Current State of the Science on Soy (or oilseed)
Use in Cattle Diets - Sponsored by U.S. Soy**

Chair: Zachary Smith, South Dakota State University

2:00 PM - 5:00 PM

Ballroom B

2:00 p.m. **Ruminant Nutrition Symposium Introduction**

2:05 p.m. 223 **Use of Soy Protein in Beef Diets to Meet Amino Acid Requirements**
Monty Kerley¹

¹Profectus Livestock Solutions

2:45 p.m. 224 **Using Soy Protein in Growing and Finishing Cattle Diets**

Warren C. Rusche¹, Zachary K. Smith¹

¹South Dakota State University

3:25 p.m. 225 **Ruminant Nutrition Symposium Break**

3:40 p.m. 226 **Soybean Byproducts on Beef Cow Nutrition: Potential Impacts on Metabolic and Physiological Parameters**

Ana Clara B. Menezes¹

¹South Dakota State University

4:20 p.m. 227 **Soy use in cattle diets: impacts on digestive physiology and tying it all together**

Kendall C. Swanson¹, Pauliane Pucetti¹

¹North Dakota State University

Wednesday, March 11, 2026

Ruminant Nutrition V: Dietary Manipulation and Fat Inclusion

Chair: Zachary Smith, South Dakota State University

8:00 AM - 9:45 AM

210/211/212

8:00 a.m. 228 **Impact of the Frequency of Varying Modified Distillers Grains Plus Solubles Inclusions in Feedlot Diets on Performance, Carcass Characteristics, Feeding Behavior, and Ruminal pH of Finishing Steers**

Paige Madison¹, Sofia Suarez-Lorences¹, Josh R. Benton², Keara O'Reilly³, Jim C. MacDonald³, Galen E. Erickson³

¹University of Nebraska- Lincoln, ²Eastern Nebraska Research, Extension, and Education Center, University of Nebraska, ³Department of Animal Science, University of Nebraska, Lincoln

8:15 a.m. 229 **Effects of Fat Content and Type on the Value of Distillers Grains Plus Solubles for Finishing Cattle**

Rebecca L. McDermott¹, Jim C. MacDonald², Galen E. Erickson²

¹University of Nebraska-Lincoln, ²Department of Animal Science, University of Nebraska, Lincoln

8:30 a.m. 230 **Can Extruded Soybeans Provide Additional Fat and Protein to Cattle Diets?**

Madeliene S. Nichols¹, Federico Podversich¹, Warren C. Rusche¹, Zachary K. Smith¹

¹South Dakota State University

8:45 a.m. 231 **Evaluation of Palm Oil as an Ingredient in Finishing Beef Cattle Diets**

Tate S. Johnson¹, Rebecca L. McDermott², Josh R. Benton³, Galen E. Erickson⁴, Jessie Morrill¹, Jim C. MacDonald⁴

¹Department of Animal Science, University of Nebraska- Lincoln, ²University of Nebraska- Lincoln, ³Eastern Nebraska Research, Extension, and Education Center, University of Nebraska, ⁴Department of Animal Science, University of Nebraska, Lincoln

9:00 a.m. 232 **Effects of Feeding Palm Oil in Beef Cattle Finishing Diets on Meat Quality**

Tate S. Johnson¹, Jessie Morrill¹, Kyra Elliott¹, Rebecca L. McDermott², Josh R. Benton³, Galen E. Erickson⁴, Jim C. MacDonald⁴

¹Department of Animal Science, University of Nebraska- Lincoln, ²University of Nebraska- Lincoln, ³Eastern Nebraska Research, Extension, and Education Center, University of Nebraska, ⁴Department of Animal Science, University of Nebraska, Lincoln

9:15 a.m. 233 **Hammer-milled Rye and Inter-planted Corn and Forage Sorghum Blends as Alternatives to Corn-based Ingredients for Growing Beef Steer Diets**

Sean M. Robinson¹, Federico Podversich¹, Zachary K. Smith¹, Warren C. Rusche¹

¹South Dakota State University

9:30 a.m. 234 **Effects of Kernel Processed High Moisture Ear Corn on Growth Performance and Carcass Characteristics in Finishing Cattle**

Reanna R. Byrnes Schoen¹, Federico Podversich¹, Zachary K. Smith¹, Warren C. Rusche¹

¹South Dakota State University

Nonruminant Nutrition VIII: Enzymes and Layer Nutrition

Chair: Amy Petry, University of Missouri

8:00 AM - 10:30 AM

205/206/207

8:00 a.m. 250 **Award Talk: Effects of Xylanase or Stimbiotic on Apparent Ileal, Cecal, and Total Tract Digestibility of Energy and Dietary Fiber in Diets fed to Growing Pigs**

Jessica P. Acosta¹, Gemma González-Ortiz², Hans H. Stein³

¹University of Missouri, ²AB Vista, ³University of Illinois

8:30 a.m. 247 **Effects of a Xylanase and Beta-glucanase Combination on Growth Performance and Tissue Gene Expression in Post-weaning Pigs Fed Low and High Non-starch Polysaccharides Diets**

Pau Aymerich¹, Elizabeth Ball², Deepak E. Velayudhan¹, Ramon Muns², Rachael Hardy¹, Yueming Dersjant-Li¹, Ester Vinyeta¹

¹Danisco Animal Nutrition & Health (IFF), ²Agri-Food & Biosciences Institute (AFBI)

8:45 a.m. 248 **Effects of Compound Enzymes in Reduced Nutrient Density Nursery Pig Diets**

Ty Kim¹, Mike D. Tokach¹, Joel M. DeRouchey¹, Jason C. Woodworth¹, Robert D. Goodband¹, Katelyn N. Gaffield¹, Ying Zhou², Xuerong Song², Xiuyi Wu²

¹Kansas State University, ²Wuhan Sunhy Biology Co., Ltd.

9:00 a.m. 249 **Increasing Microbial Phytase in Diets with Moderate and High Phytate on Nursery Swine Growth Performance**

Jose A. Soto¹, Henrique S. Cemin¹, Morgan Hart¹, Jamil E. G. Faccin¹, Sharlie A. Hansen¹, Ernie L. Hansen¹

¹Alltech

9:15 a.m. **Nonruminant Nutrition VIII: Break**

9:30 a.m. 251 **Impact of Xylanase Supplementation on Nitrogen Utilization and Ammonia Emissions in Growing Pigs**

ALINE ALVES DA SILVA¹, Marie-Pierre Letourneau Montminy², Léa Cappelaere², DALILA LARIOS³, Christelle Boudry⁴, Stéphane Godbout³

¹Université Laval, ²UNIVERSITE LAVAL, ³Institut de recherche et de développement en agroenvironnement (IRDA), ⁴BELFEED

9:45 a.m. 252 **Evaluation of Phytase Inclusion on Tissue Accretion in Pigs Fed Phosphorus Deficient Diets**

Grace C. McKibben¹, Jared A. Harshman², Nicholas K. Gabler³

¹Iowa State University, ²Huvepharma Inc., ³Department of Animal Science, Iowa State University

10:00 a.m. 253 **Reducing Dietary Calcium and Phosphorus Concomitantly During a Depletion–repletion Cycle Improves Phosphorus Utilization: A Meta-analysis Approach**

Nicolas Coquil¹, Marie-Pierre Letourneau Montminy¹

¹Laval University

10:15 a.m. 254 **Effect of a Phosphate-free Diet Supplemented with Phytase on the Growth Performance and Mineralization of Growth Pigs**

Nicolas Coquil¹, Marie-Pierre Letourneau Montminy¹

¹Laval University

Nonruminant Nutrition XI: Nursery and Grow Finisher Pig Nutrition

Chair: Darlene Bloxham, Adisseo USA

8:00 AM - 11:15 AM

Ballroom C

8:00 a.m. 258 **Award Talk: Effects of Supplemental Galacto-oligosaccharides and 2'-fucosyllactose, Alone or in Combination, on Intestinal Health and Growth Performance of Nursery Pigs Fed Diets Including Bovine Milk Co-products**

Alexa R. Gormley¹, Jung Yeol Sung¹, Sung Woo Kim¹

¹NC State University

8:30 a.m. 255 **Effect of Guanidinoacetic Acid Supplementation Compared with Ractopamine on Performance and Body Composition of Finishing Pigs**

John K. Htoo¹, Eloá B. Bosso², Danilo Marçal³, Henrique G. Brand⁴, Luciano Hauschild²

¹Evonik Operations GmbH, ²São Paulo State University (Unesp), ³Universidade Brazil, ⁴Evonik Brasil Ltda

8:45 a.m. 256 **Effect of Copper Source on Finishing Pig Growth Performance and Carcass Characteristics**

Samantha A. Swanson¹, Jason C. Woodworth¹, Mike D. Tokach¹, Robert D. Goodband¹, Katelyn N. Gaffield¹, Joel M. DeRouchey¹, Jordan T. Gebhardt¹, Matt Einarson²

¹Kansas State University, ²SAM HPRP Chemicals, Inc. DBA SAM Nutrition

9:00 a.m. 257 **Individual precision feeding reduces the environmental impact of pig production in Québec, while timothy hay inclusion lowers performance and limits its environmental benefits**

Berta Llorens¹, Aline Remus¹, Candido Pomar¹, Marie-Pierre Letourneau Montminy², Laetitia Cloutier³

¹AgriFood Canada, ²UNIVERSITE LAVAL, ³Centre de Développement du Porc du Québec

9:15 a.m. 259 **Effect of Dietary Inclusion of a Spirulina (Arthospira Platensis) By-product in Post-weaning Diets on Pig Growth to Day 44 Post-weaning, Haematology and Selected Intestinal Gene Expression**

Joe P. Glynn¹, Clara Negrini¹, Gillian E. Gardiner², Linda Giblin³, Peadar G. Lawlor¹

¹Teagasc Animal & Grassland Research & Innovation Centre, ²South East Technological University, ³Teagasc Food Research Centre

9:30 a.m. **Nonruminant Nutrition XI Break**

9:45 a.m. 260 **Effects of Increasing Dietary Trypsin Inhibitor Levels on Growth Performance, Fecal Score, Gut Permeability and Mucosal Antioxidant Capacity of Nursery Pigs**

Chan Ho Kwon¹, Jannell A. Torres¹, Eva S. Safaie¹, Ji Hye Lee¹, S Maria S. Mendoza², Jinlei Wen², Sunhyung Kim³, Hari B. Krishnan⁴, Young Dal Jang¹

¹University of Georgia, ²Evonik Corporation, ³University of Missouri, ⁴USDA-Agricultural Research Service

10:00 a.m. 261 **Higher Dietary Protein Increases Nitrogen Retention and Improves Caloric Efficiency**

Richard Faris¹, Molly L. McGhee¹, Sandra Paredes¹, Qingyun Li¹, Chad M. Pilcher², Chris W. Parks¹

¹Cargill Animal Nutrition & Health, ²Cargill Animal Nutrition

10:15 a.m. 262 **Effects of Saccharomyces Cerevisiae Postbiotics Fed in the First Nursery Diet on the Performance of Weanling Pigs**

Roger A. Arentson¹, Jenna A. Seltzer¹, Brian Melody¹, Scott N. Carr¹, Matthew A. Vaughn²

¹Elanco, ²Puretein Bioscience LLC

10:30 a.m. 263 **Ileal Digestibility of Amino Acids in Pistachio Blanks and Growth Performance of Weanling Pigs Fed Diets Containing Pistachio Blanks as a Source of Fiber**

Yeonwoo Kim¹, Hans H. Stein²

¹University of Illinois at Urbana Champaign, ²University of Illinois

10:45 a.m. 264 **Increasing Dietary Standardized Ileal Digestible Arginine to Lysine Ratio Promotes Nursery Pig Growth Performance by Increasing Apparent Total Tract Nutrient Digestibility**

Alex Outlaw¹, Lillian Jeffers¹, Jonas McAbee¹, Paulo Azevedo², Haejin Kim¹, David Clizer³, Keith D. Haydon³, Jenna Bayne¹, Samuel J. Rochell¹, Marko Rudar¹

¹Auburn University, ²Auburn Univeristy, ³CJ Bio

11:00 a.m. 265 **Effect of Increasing Standardized Ileal Digestible Lysine on Growth Performance of PIC 408 × X54 Commercial Pigs During the Late-nursery Phase**

Jordi Camp Montoro¹, Luis E. Zaragoza¹, Annemarie Müller², Dirk Grote², Christiane Tulp³, Isaac Huerta³, Eunice Delphia¹, Danielle Wilson-Wells¹, Jiyao Guo⁴, Carine M. Vier¹, Ning Lu⁴, Steve Dritz¹, Wayne R. Cast⁴, Weasley A. Orlando⁴

¹PIC, ²Futter Allianz, ³PIC Europe, ⁴Genus PIC

Swine Translational II

Chair: David Rosero, Iowa State University

8:00 AM - 11:15 AM

213/214

8:00 a.m. 298 **Award Talk: Developmental Impacts of Early-life Rearing Environment and Handling on Growth Performance, Immune Activity, and Stress Responses in Pigs**

Kaitlyn Sommer¹, Jay S. Johnson², Ryan N. Dilger¹

¹University of Illinois Urbana-Champaign, ²University of Missouri

8:30 a.m. 235 **Effects of Litter Size Above Functional Teat Count on Litter and Sow Performance**

Naomi Willard¹, Jack Owen², Michelle Wuebker¹, Luis E. Zaragoza¹, Jeremy Robertson³, Chad Bermel³

¹PIC, ²Kansas State University, ³Brenneman Pork

8:45 a.m. 236 **Identifying Early-life Risk Factors for Predicting Pig Survival and Growth in Commercial Farms**

Pau Salgado-López¹, Jaume Coma², Mercè Farré³, Josep Gasa¹, David Solà-Oriol¹

¹Animal Nutrition and Welfare Service (SNIBA), Department of Animal and Food Science, Autonomous University of Barcelona, ²Vall Companys Group, ³Department of Mathematics, Area of Statistics and Operations Research, Autonomous University of Barcelona

9:00 a.m. 237 **Changes in Metabolism, Energy Reserves, and Gut Health in Newborn Piglets with Different Degrees of Intrauterine Growth Restriction**

Pau Salgado-López¹, Júlia Suppi¹, Jaume Coma², Josep Gasa¹, David Solà-Oriol¹

¹Animal Nutrition and Welfare Service (SNIBA), Department of Animal and Food Science, Autonomous University of Barcelona, ²Vall Companys Group

9:15 a.m. 238 **Effects of Birth Weight and Age at Processing on Piglet Pre-weaning Mortality and Incidence of Scrotal Ruptures in Male Piglets**

Christopher L. Puls¹, Chris L. Eden¹, Bob Altman¹, Katherine A. McCormick¹

¹United Animal Health

9:30 a.m. **Swine Translational II Break**

9:45 a.m. 239 **Characterization of Changes in Swine Blood Metabolite Concentrations from Weaning to Finishing**

Grady Privett¹, Ursula M. McCormack², Jon R. Bergstrom², Jason C. Woodworth¹, Jordan T. Gebhardt¹, Mike D. Tokach¹, Robert D. Goodband¹, Joel M. DeRouchey¹, Katelyn N. Gaffield¹

¹Kansas State University, ²dsm-firmenich

10:00 a.m. 240 **Effect of Nursery Pig Movement and Mixing Strategies on Performance and Health**

Brady McNeil¹, Christine Mainquist-Whigham², Ethan W. Stephenson², Steven Kitt¹, Ashley R. Hartman³, Amanda Cross¹, Tom Rathje¹

¹DNA Genetics, ²Pillen Family Farms, ³Kansas State University

10:15 a.m. 241 **Effect of Feed Outage Frequency on Pig Growth Performance and Survival During the Grow-finish Period**

Kristen M. Ewing¹, Katie M. Brown¹, Caleb M. Shull¹, Omarh F. Mendoza¹

¹The Maschhoffs, LLC

10:30 a.m. 242 **Effects of Number of Pigs Per Feeder Hole in Wet-dry Feeders and of Supplemental Water in pic®800 Sired Commercial Pigs**

Isaiah T. Spath¹, Luis E. Zaragoza¹, Michelle Wuebker¹, Matthew Spindler¹, Danielle Wilson-Wells¹, Paul F. Frahm², Erin Little², Roy Edler²

¹PIC, ²Pipestone

10:45 a.m. 243 **Effects of Precision Feeding on the Growth Performance and Variation of Growing-finishing Pigs**

Rebecca K. Pritchett¹, Christopher L. Puls¹, Devin Goehring¹, Gerielle Suffy¹, Ethan Ward¹, Eric Nyberg¹, Matthew J. Ritter¹

¹United Animal Health

11:00 a.m. 244 **Assessing the Accuracy and Reliability of the Swine Sense Hub® Camera for Estimating Body Weights of Individual Growing Pigs**

Sarah L. Phelps¹, Nathan Vander Werff¹, Eric Nyberg², John Bell², Christopher L. Puls², Matthew J. Ritter², John Kolb³, Nadav Sharon³, Tom Stein³, David S. Rosero¹

¹Iowa State University, ²United Animal Health, ³Merck

Processed Meats Symposium: Beyond Harvest: Connecting Animal Science to Processed Meat

Chair: Christi Calhoun, American Meat Science Association

8:00 AM - 12:15 PM

Ballroom B

8:00 a.m. **Symposium Overview**

8:15 a.m. 288 **Processed Meats Value and Purpose: The Consumer.**

Larry Quint¹

¹Conagra Brands

8:30 a.m. 289 **Clarifying terminology through the AMSA Meat Lexicon: Addressing the ultra-processed foods debate and its implications for shelf life, food waste, and nutrition**

Benjamin M. Bohrer¹

¹The Ohio State University

8:45 a.m. 290 **Muscle Biology Factors Influencing Processed Meat Functionality.**

Jeffrey J. Sindelar¹

¹University of Wisconsin

9:05 a.m. 291 **Fresh meat quality as a functional input to processed pork**

Bailey Harsh ¹

¹University of Illinois Urbana-Champaign

9:30 a.m. 292 **Technological Strategies to Improve the Lipid Quality of Meat Products.**

Rodrigo Tarté ¹

¹Iowa State University

10:00 a.m. **Symposium Break**

10:15 a.m. 293 **Nitrate, Nitrite, and Alternative Ingredients Used for Meat Curing**

Gary A. Sullivan ¹

¹University of Nebraska-Lincoln

10:45 a.m. 294 **Sous Vide and Emerging Thermal Processing Technologies.**

Keith Goerl ¹

¹Miniat

11:15 a.m. 295 **The Collaborative Process**

Steve Pylypiw ¹, Garrett Skaar ¹

¹JBS Prepared Foods

11:45 a.m. 296 **AMSA processed meats chapters and assessment guidelines**

Benjamin M. Bohrer ¹

¹The Ohio State University

11:50 a.m. 297 **Technical and Reference Resources for Processed Meat Science**

Christi Calhoun ¹

¹American Meat Science Association

12:00 p.m. **Symposium Summary**

Nonruminant Nutrition IX: Nursery Pig Nutrition II

Chair: Caroline Gonzalez, Old Bridge Minerals

8:00 AM - 1:00 PM

Ballroom A

8:00 a.m. 287 **Maxwell Lectureship**

Jon R. Bergstrom ¹

¹dsm-firmenich

9:00 a.m. 266 **Effects of Feed Form (meal + Crumble Basemix vs. Pellet) on Nursery Pig Growth Performance**

Michelle N. McCallum¹, Rodney B. Hinson¹, Christopher L. Puls¹, Josie Archibald¹

¹United Animal Health

9:15 a.m. 267 **Standardized Ileal Digestibility of Amino Acids in Four Egg Products Fed to Weanling Pigs**

Natalia dos Santos Fanelli¹, Minoy Cristobal¹, Su A Lee², Yi-Chi Cheng³, Ingmar Middelbos³, Hans H. Stein²

¹University of Illinois at Urbana-Champaign, ²University of Illinois, ³Symrise Pet Food North America Inc.

9:30 a.m. 268 **Effects of Diet and Water Butyrate Glyceride Supplementation on Nursery Pig Performance**

Ty Kim¹, Jason C. Woodworth¹, Mike D. Tokach¹, Joel M. DeRouchey¹, Robert D. Goodband¹, Katelyn N. Gaffield¹, Jordan T. Gebhardt¹, Ying Chen², Ross Wolfenden², Mark Whitney³

¹Kansas State University, ²Eastman Chemical Company, ³QualiTech

9:45 a.m. 269 **Reduced Protein Digestibility and Growth Performance Due to Feeding Lentil-based Diets to Weaned Pigs Can Be Ameliorated by Including Benzoic Acid**

L. F. Wang¹, Eduardo Beltranena², Ruurd T. Zijlstra¹

¹University of Alberta, ²North Carolina State University

10:00 a.m. 270 **Effects of Dietary L-glutamate, L-aspartate, and Their Combination on Immune Responses and Intestinal Integrity of Weaned Piglets Challenged with Enterotoxigenic *Escherichia coli* F18**

Supatirada Wongchanla¹, Youngmin Park¹, Sangwoo Park¹, Shuhan Sun¹, Yanhong Liu¹

¹University of California, Davis

10:15 a.m. **Nonruminant Nutrition IX: Break**

10:30 a.m. 286 **Award Talk: Factors Influencing Zn Excretion in Pigs**

Julian Arroyave¹, Mike D. Tokach¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Robert D. Goodband¹, Katelyn N. Gaffield¹, Jordan T. Gebhardt¹

¹Kansas State University

11:00 a.m. 272 **Effect of Dietary Crude Protein and Acid-binding Capacity on Growth Performance, Serum Cytokine Concentration, and Intestinal Morphology in Enterotoxigenic *Escherichia coli* F18 Challenged Nursery Pigs**

Jessica Smallfield¹, Jordan T. Gebhardt¹, Mike D. Tokach¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Robert D. Goodband¹, Katelyn N. Gaffield¹, Raghavendra G. Amachawadi², Harith Salih¹, Taghreed Mahmood¹, Franco Matias Ferreyra¹, Marcelo Almeida³

¹Kansas State University, ²Beef Cattle Institute, ³Iowa State University

11:15 a.m. 273 **Impact of Different Lactose Feeding Programs on Growth Performance and Diarrhea Occurrence in Nursery Pigs**

Marco Antônio Kunrath ¹, Felipe Norberto Alves Ferreira ¹, Clarice Speridião Silva Neta ¹, Fabrício Almeida Santos ¹, Anália Maria Ribeiro da Silva ¹, Ana Caroline Rodrigues da Cunha ¹, Renato Philomeno ¹

¹Agroceres Multimix

11:30 a.m. 274 **Evaluation of a Novel Essential Oil Blend in Nursery Pig Performance and Health Outcomes**

Jose A. Soto ¹, Henrique S. Cemin ¹, Morgan Hart ¹, Jamil E. G. Faccin ¹, Sharlie A. Hansen ¹, Ernie L. Hansen ¹

¹Alltech

11:45 a.m. 275 **Increasing Levels of L-glutamate in Liquid Form to Reduce the Negative Impact of Weaning Stress and Summer Transport in Pigs**

Caitlyn R. Sullivan ¹, Carley R. Hopkins ¹, Daniel S. Wagner ¹, Jillian K. Bonderer ¹, Ashley L. Rodman ¹, Mikel J. Thompson ¹, Juan F. Castillo Zuniga ¹, Nicholas J. Prosek ¹, Denny M. McKilligan ², J. Ezequiel M. Guzmán ², Amy L. Petry ¹, Jay S. Johnson ¹

¹University of Missouri, ²Tech Mix

12:00 p.m. 276 **Protected Benzoic Acid Mitigates E. coli F18–induced Inflammation, Gut Dysbiosis, and Enhances Performance and Health in Commercial Nursery Pigs**

Jesus A. Acosta Camargo ¹, Bradley V. Lawrence ¹, Alex Hintz ², Marisol Castillo ², Deana Hancock ²

¹Novus International, ²Novus International Inc

12:15 p.m. 277 **Corn Derived Deoxynivalenol's Impact on Nursery Pig Performance**

Thomas A. Crome ¹, Darlene J. Bloxham ², Fredrik Sandberg ³, Scott Radke ⁴, Nicholas K. Gabler ⁵

¹Iowa State University, ²Adisseo USA, ³Furst-McNess Company, ⁴Vet Diagnostic & Production Animal Medicine, Iowa State University, ⁵Department of Animal Science, Iowa State University

12:30 p.m. 278 **A Systematic Review of Liquid Milk Supplementation in Pre-weaned Piglets**

Jackson R. Connor ¹, Denny M. McKilligan ², Eric van Heugten ³, Suzanne M. Leonard ¹

¹North Carolina State University, ²Tech Mix, ³Department of Animal Science, North Carolina State University

12:45 p.m. 271 **Effects of Dietary Acid-binding Capacity at pH 4 on Growth Performance and Fecal Parameters of Weaned Piglets**

Yron Joseph Y. Manaig ¹, Laia Blavi ², Alessandra Rigo Monteiro ¹, Meike Bouwhuis ¹, Astrid Koppenol ², Simon Tibble ²

¹ANIMINE, ²AB Neo

Nonruminant Nutrition X: Meta, Omics and Other Applications in Swine Nutrition

Chair: Robert Payne, Elanco Animal Health

10:00 AM - 12:30 PM

210/211/212

10:00 a.m. 280 **Award Talk: Beyond Amino Acids: Role of Bioactive Compounds in Soybean Meal for Intestinal Health Nursery Pigs Fed Soybean Meal Free Diets**

Yesid R. Garavito-Duarte¹, Jung Yeol Sung¹, Sung Woo Kim¹

¹NC State University

10:30 a.m. 279 **Effects of a Novel Dairy Bioactive (FXP™) on Infectivity of *Streptococcus suis* in Porcine Intestinal Epithelial Cells**

Nathan L. Horn¹, Joel D. Spencer², Arun L. Bhunia³, Nicholas Gallina⁴, Aaron M. Gaines⁵

¹United Animal Health; Department of Animal Science, Purdue University, ²United Animal Health, ³Department of Food Science, Purdue University, ⁴Department of Food Sciences, Purdue University, ⁵Ani-Tek

10:45 a.m. 281 **Multi-omics Uncovers Distinct Microbial Networks Associated with a Blend of Hydrolysable and Condensed Tannins in Weaned Pigs Reared Under Two Different Farming Conditions**

Paolo Trevisi¹, Federico Correa², Giorgia Palladino³, Francesco Palumbo⁴, Daniel Scicchitano³, Giulia Babbi³, Andrea Castagnetti⁵, Simone Rampelli³, Marco Candela³, Pier Luigi Martelli³, Nicola Panciroli⁶, Diana Luise²

¹Department of Agricultural and Food Science (DISTAL) - University of Bologna, ²University of Bologna, ³Department of Pharmacy and Biotechnology, University of Bologna, Bologna, Italy, ⁴Department of Agro-Food Sciences and Technologies, University of Bologna, Bologna, Italy, ⁵3Wellmicro, Bologna, Italy, ⁶Silvateam SpA, Italy

11:00 a.m. 282 **Metagenomic Analysis of the Cecum Microbiome from Pigs Fed Increasing Levels of Corn-derived Insoluble Fiber**

Hannah Miller¹, Stephan Schmitz-Esser², Aaron Ericsson¹, Amy L. Petry¹

¹University of Missouri, ²South Dakota State University

11:15 a.m. 283 **From Bench to Barn: Functional Characterization and Meta-analysis of a *Bacillus Velezensis* Consortium in Swine Nutrition**

Deepak E. Velayudhan¹, Josh Walker², Katrine Bie Larsen³, Steffen Yde Bak³, Niels Cristensen³, Nicholas Chubbs², Weiqing Zeng², Adrián Schwarzenberg², Chong Shen³, Ester Vinyeta¹

¹Danisco Animal Nutrition & Health (IFF), ²Health & Biosciences, IFF, ³IFF

11:30 a.m. 284 **Using a Screening Tool Is Effective in Choosing Costly Nursery Ingredients**

Kynna M. Crawford¹, Katlyn A. McClellan¹, Eric M. Weaver¹

¹South Dakota State University

11:45 a.m. 285 **Effects of Antibiotics on Microbial Community Composition in Pigs**

Olivier Munezero ¹, James E. Wells ², Oliver T. William ³, Philip S. Miller ⁴, Thomas E. Burkey ⁴,
Samodha C. Fernando ⁴

¹University of Nebraska-Lincoln, ²USMARC, ³USDA, U.S. Meat Animal Research Center, ⁴UNL

12:00 p.m. 317 **Award Talk: Integrating Multi-OMICs Data into Practical Swine Production**

Sudario Roberto Silva Junior ¹, Andres Gomez ¹, Pedro E. Urriola ²

¹University of Minnesota, ²University of Minnesota, Department of Animal Science