

ORAL PRESENTATIONS
RAW UNFORMATTED SCIENTIFIC PROGRAM

(12/22/23)

Monday, March 11, 2024

**Physiology Symposium: The Microbiome and the Host:
Functional Role in Metabolism, Immunity, and Gut-Brain Axis**

8:30 AM - 12:30 PM

Ballroom A

8:30 a.m. **Physiology Symposium Introduction**

8:35 a.m. 1 **Microbiology and neurobiology in health and disease**

Mark Lyte ¹

¹Iowa State University

9:15 a.m. 2 **Microbiota impact on bile acid metabolism**

Jason Ridlon ¹

¹University of Illinois at Urbana-Champaign

9:55 a.m. **Physiology Symposium Break**

10:10 a.m. 3 **Intestinal microbiology and immunology in livestock**

Timothy A. Johnson ¹

¹Department of Animal Sciences, Purdue University

10:50 a.m. 4 **Nutrition and gut microbial ecology in companion animals**

Kelly S. Swanson ¹

¹University of Illinois at Urbana-Champaign

11:30 a.m. 5 **Rumen microbiome and metabolome in dairy cattle performance**

Leluo L. Guan ¹

¹University of Alberta

**Ruminant Nutrition Symposium: Methanogenesis in Ruminants:
Microbial action and approaches for whole animal measurement**

8:30 AM - 12:00 PM

Ballroom C

8:30 a.m. **Ruminant Nutrition Symposium Introduction**

8:35 a.m. 6 **Targeting establishment of methanogens in the young ruminant**

Elizabeth A. French ¹

¹USDA

9:20 a.m. 7 **Genetic targeting of the rumen microbiome and affiliated methanogens to assess methane emission in dairy cattle**

Hilario C. Mantovani ¹

¹UW Madison

10:05 a.m. **Ruminant Nutrition Symposium Break**

10:20 a.m. 8 **The Science behind methane: Using respiration calorimetry head-boxes to estimate energy balance and methane emissions**

Kristen E. Hales ¹

¹Texas Tech University

11:05 a.m. 9 **Use of new technology to measure methane emissions**

Logan Thompson ¹

¹Kansas State University

Nonruminant Nutrition I - Breeding Herd I

8:00 AM - 11:15 AM

Ballroom D

8:00 a.m. 10 **Effects of different feeding levels during gestation on gilt reproductive performance during the first lactation**

Leticia Moreira dos Santos ¹, Alex Maiorka ¹, Carine M. Vier ², Weasley Orlando ², Amanda P. Siqueira ³, Gefferson Silva ⁴, Ray Nascimento Gonsalves ³, Vanderlei Zappani ⁵, Evandro Cezar Beraldin ⁵, Ning Lu ², Steve Dritz ²

¹UFPR, ²Genus PIC, ³Agrocere PIC, ⁴Crystal Spring, ⁵LAR Cooperativa Agroindustrial

8:15 a.m. 11 **The effect of increased standardized ileal digestible lysine through increased soybean meal during late gestation on lactating sow and litter performance**

Abigail K. Jenkins ¹, Jason C. Woodworth ¹, Jordan T. Gebhardt ¹, Joel M. DeRouchey ¹, Mike D. Tokach ¹, Robert D. Goodband ¹

¹Kansas State University

8:30 a.m. 12 **Effects of increasing SID lysine (Lys) and metabolizable energy (ME) levels of lactation diets fed to young and multiparous sows**

Dustin Boler ¹, Jeremy Perez ¹, Eric Parr ¹, Michael Welch ¹, Kelsey Kyle ¹, Danielle Johnson ¹, Casey Neill ¹, Jorge Estrada ²

¹Carthage Innovative Swine Solutions, ²Carthage Veterinary Service

8:45 a.m. 13 **Impact of precision feeding during gestation on the productive career of sows over three reproductive parities**

Béatrice Sauvé¹, Laetitia Cloutier², Lucie Galliot², Frédéric Guay¹, Gabrielle Dumas², Charlotte Gaillard³, Jean-Yves Dourmad³, Aude Simongiovanni⁴, Patrick Gagnon²

¹Laval University, ²Centre de développement du porc du Québec, ³INRAE, Institut Agro, ⁴METEX ANIMAL NUTRITION

9:00 a.m. 14 **Effects of increasing daily dietary standardized ileal digestible lysine intake of gilts and sows during day 35-to-112 of gestation on reproductive performance**

Carine M. Vier¹, Weasley Orlando¹, Julia A. Calderon Diaz¹, Jorge Estrada², Jordi Camp¹, Wayne R. Cast¹, Steve Dritz¹, Luis E. Zaragoza¹, Ning Lu¹, Beau Peterson³, Dustin Boler⁴, Eric Parr⁴

¹Genus PIC, ²Carthage Veterinary Service, ³Carthage Veterinary Services, ⁴Carthage Innovative Swine Solutions

9:15 a.m. 15 **Effects of post-MSC DDGS inclusion in gestation diets compared to other fiber sources on *in vitro* gas and volatile fatty acid production**

Garrin Shipman¹, Jorge Y. Perez Palencia¹, Jinsu Hong¹, Kevin J. Herrick², Melissa L. Jolly-Breithaupt², Crystal L. Levesque³

¹South Dakota State University, ²POET Bioproducts, ³South Dakota State University

9:30 a.m. **Nonruminant Nutrition I - Breeding Herd I Break**

9:45 a.m. 16 **Effects of fiber supplementation during gestation on sow and piglet performance**

Carine M. Vier¹, Alexandra Möller Alves², Ines Andretta², Gabriel Martins², Jéssica Pereira², Weasley Orlando¹, Amanda P. Siqueira³, Vitor Moita¹

¹Genus PIC, ²UFRGS, ³Agrocere PIC

10:00 a.m. 17 **Effect of branched-chain amino acids on lactating sow and piglet performance**

Dalton C. Humphrey¹, Keith D. Haydon², Laura L. Greiner¹

¹Iowa State University, ²CJ Bio America

10:15 a.m. 18 **Effect of precision feeding standardized ileal digestible lysine to lactating sows compared to conventional feeding strategies in a commercial farm**

Mikayla Spinler¹, Jordan T. Gebhardt¹, Joel M. DeRouchey¹, Mike D. Tokach¹, Robert D. Goodband¹, Hyatt Frobose², Amanda Uitermarkt², Vitor Moita³, Jason C. Woodworth¹

¹Kansas State University, ²JYGA Technologies, ³Genus PIC

10:30 a.m. 19 **Evaluation of precision feeding standardized ileal digestible lysine to meet the lactating sow's requirement**

Mikayla Spinler¹, Jordan T. Gebhardt¹, Joel M. DeRouchey¹, Mike D. Tokach¹, Robert D. Goodband¹, Hyatt Frobose², Amanda Uitermarkt², Jason C. Woodworth¹

¹Kansas State University, ²JYGA Technologies

10:45 a.m. 20 **Effects of a stabilized fish oil on boar semen quality when fed during summer months**

Bradley A. Didion¹, Jamie Hundley², Michael Kleve-Feld³, Tom Gall⁴, Carine M. Vier⁵, Amanda Middleton⁵, Weasley Orlando⁵, Ning Lu⁵, Malcom Ballard⁶, Wayne R. Cast⁵, Mike Parsley⁷, Steve Dritz⁵, Kent Burgess⁶

¹Genus plc, ²Pig Improvement Company Inc., ³PIC North America, ⁴Feedworks USA Research Consultant, ⁵Genus PIC, ⁶The Ballard Group, ⁷Feedworks USA

11:00 a.m. 22 **Feeding the early gestating gilt during heat stress: implications towards fetal viability, growth, and development**

MaryKate Byrd¹, Kara R. Stewart¹, Jonathan A. Pasternak², Jay S. Johnson³

¹Purdue University, ²Department of Animal Sciences, Purdue University, ³USDA-ARS Livestock Behavior Research Unit

Midwest Board Symposium: Insight into how animal science can better communicate our story to consumers and society

8:00 AM - 12:00 PM

Ballroom B

Nonruminant Nutrition II - Grow-Finish I

8:30 AM - 11:00 AM

Hall of Ideas F/I

8:30 a.m. 23 **The effects of dietary net energy level on grow-finish performance and carcass characteristics of intact male market pigs managed with Improvest®**

Benjamin M. Bohrer¹, Yifei Wang¹, Blaine Hansen², Steve Pollmann³, Jose Landero⁴, Malachy Young⁴

¹The Ohio State University, ²BCH Consulting LLC, ³DSP Consulting LLC, ⁴Gowans Feed Consulting

8:45 a.m. 24 **Effects of reducing dietary net energy on growth performance and carcass characteristics of grow-finish pigs**

Rafe Q. Royall¹, Mike D. Tokach¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Robert D. Goodband¹, Jordan T. Gebhardt¹, Carine M. Vier², Matthew Spindler², Weasley A. Orlando², Luis E. Zaragoza², Ning Lu², Wayne R. Cast², Danielle Wilson-Wells², Steve Dritz², Jordi Camp², Julia Holen³, Alyssa Betlach³

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

9:00 a.m. 25 **Effects of dietary standardized ileal digestible lysine on growth performance, carcass characteristics, and economics of pigs from 100 to 130 kg**

Hilario M. Cordoba¹, Mike D. Tokach¹, Robert D. Goodband¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Jordan T. Gebhardt¹

¹Kansas State University

9:15 a.m. 26 **Effects of increasing net energy or standardized ileal digestible lysine in soybean meal-based diets on early and late finishing pig performance**

Ty Kim¹, Jamil Faccin¹, Robert D. Goodband¹, Mike D. Tokach¹, Joel M. DeRouchey¹, Jason C. Woodworth¹, Jordan T. Gebhardt¹

¹Kansas State University

9:30 a.m. 27 **Standardized ileal digestible lysine to metabolizable energy ratio equations for 12- to 127-kg boars, gilts, immunocastrated gilts and boars**

Gustavo lima¹, Gabriel Castro¹, Amanda Siqueira¹, Carine M. Vier², Weasley Orlando², Vitor Moita², Caio A. Silva³

¹Agroceres PIC, ²Genus PIC, ³UEL

9:45 a.m. **Nonruminant Nutrition II - Grow-Finish I Break**

10:00 a.m. 28 **Investigation of protein deposition pattern of PIC337×Camborough commercial pigs**

Ning Lu¹, Nanfang Zeng², Ning Su², Ling Chen², Jie Chen², Carine M. Vier¹, Wayne R. Cast¹, Steve Dritz¹, Danielle Wilson-Wells¹, Luis E. Zaragoza¹, Jordi Camp¹, Weasley Orlando¹

¹Genus PIC, ²Giastar Agro-Pastoral Co., LTD

10:15 a.m. 29 **Effects of using different dietary standardized ileal digestible lysine plans on growth performance and carcass characteristics of PIC 337 or PIC 800 sired grow-finish pigs**

Jordi Camp¹, Weasley Orlando¹, Ning Lu¹, Carine M. Vier¹, Wayne R. Cast¹, Steve Dritz¹, Luis E. Zaragoza¹, Danielle Wilson-Wells¹, Jose Landero², Malachy Young²

¹Genus PIC, ²Gowans Feed Consulting

10:30 a.m. 30 **Effects of using different dietary standardized ileal digestible lysine plans on growth performance and carcass characteristics of grow-finish pigs from high or low breeding value boars**

Jordi Camp¹, Carine M. Vier¹, Matthew Spindler¹, Julia Holen², Weasley Orlando¹, Alyssa Betlach², Wayne R. Cast¹, Steve Dritz¹, Danielle Wilson-Wells¹, Ning Lu¹, Luis E. Zaragoza¹

¹Genus PIC, ²Swine Vet Center

10:45 a.m. 31 **Effects of dietary standardized ileal digestible (SID) lysine (Lys) levels and dietary SID tryptophan to Lys ratios on growth performance and behavior of late-nursery to finish maternal barrows**

Ning Lu¹, Luis Zaragoza¹, Carine M. Vier¹, Julia A. Calderon Diaz¹, Weasley Orlando¹, Ellie Hewett², Simon Turner², Jorge Estrada³, Jordi Camp¹, Wayne R. Cast¹, Steve Dritz¹

¹Genus PIC, ²SRUC, ³Carthage Veterinary Service

Swine Translational Symposium: Pig Survival—current state, challenges, and opportunities

1:00 PM - 5:15 PM

Ballroom C

1:00 p.m. **Swine Translational Symposium Introduction**

1:05 p.m. 37 **Key Learnings from the Improving Pig Survivability Project**

Joel M. DeRouchey¹, Jason W. Ross², Christopher Rademacher², Mike D. Tokach¹, Jason C. Woodworth¹, Stacie Matchan², Daniel C. Linhares², Anna K. Johnson², Lee Schulz², Kara R. Stewart³, Jack C. Dekkers⁴, Laura L. Greiner², Nicholas K. Gabler², Jordan T. Gebhardt¹

¹Kansas State University, ²Iowa State University, ³Purdue University, ⁴Departments of Animal Science, Iowa State University

1:35 p.m. 38 **Pig Survival—Current State of the US Swine Industry**

Josh Flohr¹, Noel H. Williams¹, Hadley Williams¹

¹Seaboard Foods

3:05 p.m. **Swine Translational Symposium Break**

3:20 p.m. 40 **Feeding and managing enteric challenged pigs**

Nicholas K. Gabler¹

¹Iowa State University

4:50 p.m. 42 **Group sow housing considerations for improved survival and productivity**

Roger Campbell¹

¹RG CAMPBELL ADVISORY

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

1:00 PM - 5:30 PM

Hall of Ideas E/H

1:00 p.m. 62 **Implications of factor analyses and Bayesian network learning to develop composite traits of size attributes in developing beef heifers**

Muhammad Anas¹, Bin Zhao¹, Carl R. Dahlen², Kendall C. C. Swanson¹, Kris A. A. Ringwall¹, Lauren L. L. Hulsman Hanna¹

¹North Dakota State University, ²Department of Animal Sciences, Center for Nutrition and Pregnancy, North Dakota State University

1:15 p.m. 63 **Impacts of dietary myristic acids on mucosa-associated microbiota in relation to intestinal health and growth parameters of nursery pigs**

Hyunjun Choi¹, Gabriel C. Rocha¹, Sung Woo Kim¹

¹North Carolina State University

1:30 p.m. 64 **Effect of feeding intact protein from soybean meal instead of crystalline amino acids on growth performance, protein synthesis, and immune response of growing pigs**

Minoy A. Cristobal¹, Su A Lee², Andrea P. Mallea², Leidy J. Torres-Mendoza³, Jessica P. Acosta³, Carl M. M. Parsons³, Hans H. Stein²

¹University of Illinois, ²University of Illinois at Urbana-Champaign, ³University of Illinois at Urbana Champaign

1:45 p.m. 65 **Effect of two different implant programs on growth performance and carcass characteristics in beef steers fed to three differing harvest endpoints**

Becca Grimes Francis¹, John P. Hutcheson², Lee-Anne J. Walter², Wade T. Nichols², Zachary K. Smith¹

¹South Dakota State University, ²Merck Animal Health

2:00 p.m. 66 **A novel analytical method for identifying periods of increased mortality in individual wean-to-finish pig barns**

Caleb J. Grohmann¹, Jared E. Decker¹, Caleb M. Shull², Erin J. Lowe³, Jon Hoek³, Kevin Schnarre⁴, Dale D. Polson⁴

¹University of Missouri - Columbia, ²The Maschhoffs, LLC, ³Summit Smart Farms, ⁴Boehringer Ingelheim Vetmedica GmbH

2:15 p.m. 67 **Decontamination of a feed manufacturing environment following inoculation of porcine epidemic diarrhea virus, porcine reproductive and respiratory virus, and Seneca Valley virus 1**

Olivia Harrison¹, Haley Otott¹, Jianfa Bai¹, Vaughn Hamill¹, Aaron Singrey², Phillip C. Gauger³, Marcelo Almeida³, Jason C. Woodworth¹, Cassandra K. Jones¹, Charles R. Stark¹, Roman Pogranichniy¹, Jordan T. Gebhardt¹, Chad B. Paulk⁴

¹Kansas State University, ²South Dakota State University, ³Iowa State University, ⁴Kansas state university

2:30 p.m. 68 **Serological comparison of IBR-BVD-PI3-BRSV- *Mannheimia haemolytica* toxoid vaccines**

Kirsten A. Midkiff¹, Beth B. Kegley², Shane Gadberry¹, Robin A. Cheek³, Jana L. Reynolds², Tom Hess¹, Jeff Sarchet⁴, Mitch Blanding⁴, Tom Short⁴, Jeremy G. Powell²

¹University of Arkansas System Division of Agriculture, ²University of Arkansas, ³University of Arkansas, ⁴Zoetis

2:45 p.m. 69 **Effect evaluation of two sources of zinc at EU-authorized level on growth performance and gut health of piglets with a low or normal birth weight**

Clara Negrini¹, Diana Luise¹, Federico Correa¹, Sara Virdis¹, Agathe Roméo², Alessandra Monteiro², Paolo Trevisi¹

¹University of Bologna, ²Animine Precision Minerals

3:00 p.m. 70 **Determination of phosphorus release of Microtech phytase in nursery pig diets**

Ron Aldwin S. Navales¹, Katelyn Gaffield¹, Ty Kim¹, Joel M. DeRouchey¹, Paul Martin², Juan Javierre³, Jordan T. Gebhardt¹, Robert D. Goodband¹, Mike D. Tokach¹, Jason C. Woodworth¹

¹Kansas State University, ²Imogene Ingredients, ³JA Santafe Ventures S.L.

3:15 p.m. **Graduate Student Oral Competition PHD Break**

3:30 p.m. 71 **Growth and reproductive responses to gonadotropins in gilts fed on ad libitum (AD) or restricted (RS) bases using an electronic sow feeder (ESF)**

Richard T. Niblett¹, Kimberly A. Williams¹, Marguerite B. Cross¹, Alexis L. Clapp¹, Mark J. Estienne¹

¹Virginia Tech- Tidewater Agricultural Research and Extension Center

3:45 p.m. 72 **Effect of In-feed fecal microbiota transplant on growth performance and gut microbiota dynamics of piglet subjected to post-weaning stress**

Paul O. Oladele¹, Brian T. Richert¹, Timothy A. Johnson²

¹Purdue University, ²Department of Animal Sciences, Purdue University

4:00 p.m. 73 **Effects of blends of organic acids and monoglycerides on immune responses of weaned pigs experimentally infected with enterotoxigenic *Escherichia coli* F18**

Sangwoo Park ¹, Ying Chen ², Ross Wolfenden ², Yanhong Liu ¹

¹University of California, Davis, ²Eastman Chemical Company

4:15 p.m. 74 **Feeding style and its influence on growth, circulating insulin, and spatial preference of young pigs**

Kaitlyn Sommer ¹, Loreta Sutkus ², Rebecca Golden ², Ryan N. Dilger ³

¹University of Illinois - Urbana Champaign, ²University of Illinois, ³University of Illinois at Urbana-Champaign

4:30 p.m. 75 **Diet acid-binding capacity-4 influences nursery pig performance and fecal dry matter**

Ethan Stas ¹, Mike D. Tokach ¹, Jason C. Woodworth ¹, Joel M. DeRouchey ¹, Robert D. Goodband ¹, Jordan T. Gebhardt ¹

¹Kansas State University

4:45 p.m. 76 **Effect of 0.79% top-dressed arginine supplementation at different gestation periods and seasons on the colostrum composition and productive performance of sows and piglets**

Sara Viridis ¹, Diana Luise ¹, Federico Correa ¹, Francesco Palumbo ¹, Clara Negrini ¹, Gabriella Orazzo ¹, Maria Vittoria Graziosi ¹, Umberto Rolla ², Paolo Trevisi ¹

¹University of Bologna, ²Martini S.p.A.

5:00 p.m. 77 **Healing progression of tail docking and ear tag wounds in lambs**

Jocelyn M. Woods ¹, Sarah J.J. Adcock ¹

¹University of Wisconsin Madison

5:15 p.m. 78 **Estimates of genetic parameters for weight, wool, and carcass traits of Rambouillet sheep**

Hilal Yazar Gunes ¹, Luiz F. F. Brito ², Tom W. Murphy ³, Carrie S. S. Wilson ⁴, Ronald M. Lewis ⁵

¹University of Nebraska-Lincoln, ²Purdue University, ³U.S. Meat Animal Research Center, ⁴U.S. Sheep Experiment Station, ⁵University of Nebraska - Lincoln

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

1:00 PM - 5:30 PM

Hall of Ideas G/J

1:00 p.m. 79 **Evaluating the effects of increasing levels of sodium diformate on nursery pig performance**

Gracie Becker ¹, Katelyn Gaffield ¹, Mike D. Tokach ¹, Joel M. DeRouchey ¹, Jason C. Woodworth ¹, Robert D. Goodband ¹, Troy Lohrmann ², Christian Lückstädt ³, Jordan T. Gebhardt ¹

¹Kansas State University, ²Quality Technology International, ³ADDCON

1:15 p.m. 80 **Substitution of dried distillers grains with soybean meal on beef cattle diets: Effects on ruminal ammonia and volatile fatty acid concentrations**

Natasha L. Macholan¹, Grace Jardon¹, Elissa Colombo², Zachary K. Smith¹, Warren C. Rusche¹, Ana Clara Baiao Menezes¹

¹South Dakota State University, ²William Carey University

1:30 p.m. 81 **Effects of udder quarter location on colostrum yield, nutrients, and immunoglobulin G in beef heifers**

Jessalyn E. Caple¹, Abigail R. Rathert-Williams¹, Colby A. Redifer¹, Thomas B. McFadden¹, Allison M. Meyer¹

¹Division of Animal Sciences, University of Missouri

1:45 p.m. 82 **Relationships between performance traits and osteochondrosis of the hock in Standardbred racehorses**

Ella Frake¹, Nicole Tate¹, Annette McCoy², Molly McCue¹

¹University of Minnesota, ²University of Illinois

2:00 p.m. 83 **Effect of stocking density on F1 Gilt reproductive performance**

Clara K. Henry¹, Rachel Self², Brady McNeil³, Amanda Cross³, Ethan Stephenson⁴, Christine Mainquist-Whigham⁴

¹Michigan State University, ²University of Missouri, ³DNA Genetics, ⁴Pillen Family Farms

2:15 p.m. 84 **Evaluating the effects of hind gut acidosis in sheep on rumen fermentation ex vivo**

Joshua C. McCann¹, Emma G. Prybylski², Haley F. Linder¹

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

2:30 p.m. 85 **The influence of supplementing isolated or intact structural fiber on the physicochemical properties of digesta and fecal consistency of nursery pigs**

Alexis Lloyd¹, Bre Pace¹, Erick Fuentes Cardona¹, Hannah Miller¹, Rachel Self¹, Isabella Murphy¹, Leah M. Kellesvig², Michaela Metz², Amy L. Petry¹

¹University of Missouri, ²Vita Plus

2:45 p.m. 86 **Assessment of sow hemoglobin concentration and its impact on farrowing duration**

Sydney L. Sheffield¹, Katlyn A. McClellan¹, Crystal L. Levesque¹

¹South Dakota State University

3:00 p.m. 87 **Evaluating the effects of an amino acid-formulated diet on ruminal fermentation in vitro**

McKenna Merritt¹, Haley F. Linder², Michael J. Cecava³, Joshua C. McCann²

¹Western Illinois University, ²University of Illinois Urbana-Champaign, ³Boveta Nutrition, LLC

3:15 p.m. **Undergraduate Student Oral Competition Break**

3:30 p.m. 88 **Ruminal degradation profiles of dry matter, organic matter, and crude protein of finishing diets with different levels of inclusion of DDGS and soybean meal**

Katherine M. Moening¹, Grace Jardon¹, Elissa Colombo², Zachary K. Smith¹, Warren C. Rusche¹, Ana Clara Baiao Menezes¹

¹South Dakota State University, ²William Carey University

3:45 p.m. 89 **Evaluation of repeatability of anogenital distance measured with either a caliper or photogrammetry**

Andres Olalde¹, Kylie P. Ewing¹, Joshua C. McCann², Daniel W. W. Shike²

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

4:00 p.m. 90 **Evaluating water- and feed-based arginine supplementation on newly weaned pig growth and gastrointestinal health**

Ayva Bohr¹, Chloe S. Hagen¹, Keith D. Haydon², Laura L. Greiner¹

¹Iowa State University, ²CJ Bio America

4:15 p.m. 91 **The effect of increasing oat groat levels on nursery pig performance, digesta pH, and fecal consistency and physicochemical properties**

Bre Pace¹, Alexis Lloyd¹, Isabella Murphy¹, Hannah Miller¹, Amy L. Petry¹

¹University of Missouri

4:30 p.m. 92 **Factors influencing bull selection in Illinois beef producers: Analysis of retained and non-retained ownership producers**

Grace E. Rincker¹, Joshua C. McCann¹, Daniel W. W. Shike¹, William T. Meteer¹

¹University of Illinois Urbana-Champaign

4:45 p.m. 93 **Evaluating the efficacy of anthelmintics in an upper Midwest horse herd**

Sarah Schmidt¹, Avery Dobrzelecki¹, Alex Pfaffenbach¹, Savea Zimmerman-Cameron¹, Morgan Pyles¹

¹University of Minnesota Crookston

5:00 p.m. 94 **Effects of orally administered *Megasphaera elsdenii* during finishing diet realimentation on feedlot steer fecal consistency, clinical depression, and rumination**

Zachary Schoelerman¹, Warren C. Rusche¹, Zachary K. Smith¹, Forest L. Francis¹

¹South Dakota State University

5:15 p.m. 95 **Effects of increasing standardized ileal digestible valine:lysine ratio on growth performance in finishing pigs**

Samantha Swanson¹, Andy Boschert¹, Mikayla Spinler¹, Jason C. Woodworth¹, Mike D. Tokach¹, Robert D. Goodband¹, Joel M. DeRouchey¹, Jordan T. Gebhardt¹

¹Kansas State University

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

Chair:

2:00 PM - 4:45 PM

Hall of Ideas F/I

2:00 p.m. 96 Evaluating the impact of macroenvironment temperature on thermoregulatory and milk quality parameters in lactating sows and their litter

Mekenzie R. Cecil ¹, Samantha M Neeno ¹, MaryKate Byrd ¹, Tyler C C. field ¹, Jeremy N Marchant ¹, Allan P. Schinckel ¹, Brian T. Richert ¹, Ji-Qin Ni ¹, Robert M M. Stwalley III ¹, Jay S. Johnson ²
¹Purdue University, ²USDA-ARS Livestock Behavior Research Unit

2:15 p.m. 97 Effects of crude protein content and supplementing probiotics in late gestation and lactation sow diets on performance of sows and suckling pigs

Leah E. Chrapun ¹, Jinyoung Lee ¹, S. M. S. Mendoza ², John K. Htoo ³, Martin Nyachoti ¹
¹University of Manitoba, ²Evonik Corporation, ³Evonik Operations GmbH

2:30 p.m. 98 Adding parasite resistance to the breeding objective in Hair Sheep

Robert M. Forbes ¹, Tom W. Murphy ², Joan M. Burke ³, Ronald M. Lewis ¹
¹University of Nebraska - Lincoln, ²U.S. Meat Animal Research Center, ³USDA, ARS, Dale Bumpers Small Farms Research Center

2:45 p.m. 99 Phytochemicals as medical growth promoter replacement on growth performance in wean to finisher pigs

Hannah G. Grogan ¹, Rebecca Allen ¹, Robert Story ¹, Bernard Sam ¹, Jamie Andrés Ángel Isaza ², Blanca Cecilia Martinez ², Álvaro José Uribe ², Charles V. V. Maxwell ¹, Tsungcheng Cheng Tsai ¹
¹University of Arkansas, ²PROMITEC SANTANDER S.A.S

3:00 p.m. 100 Evaluating the effect of liver copper concentration on vaccine response in lightweight dairy-beef steers

Jacob A. Henderson ¹, Jodi McGill ¹, Stephanie L. Hansen ¹
¹Iowa State University

3:30 p.m. 101 Supplementation of Valine, Isoleucine, and Tryptophan may overcome the negative effects of dietary excess Leucine in high protein corn protein when fed to weanling pigs

Andrea P. Mallea ¹, Su A Lee ¹, Minoy A. Cristobal ², Leidy J. Torres-Mendoza ², Hans H. Stein ¹
¹University of Illinois at Urbana-Champaign, ²University of Illinois

3:45 p.m. 102 Circadian patterns of behavior, respiration, rectal temperature, saliva melatonin, cytokine levels, and milk immune cells are altered by cooling heat-stressed lactating sows

Wonders Ogundare ¹, Leriana Garcia Reis ², Amber Jannasch ², Linda M. Beckett ², Allan P. Schinckel ², Theresa M. Casey ³, Radiah C. Minor ¹
¹North Carolina A&T State University, ²Purdue University, ³Department of Animal Sciences, Purdue University

4:00 p.m. 103 **Effects of partial or total replacement of dried distillers with soybean meal on growth performance, carcass characteristics, sera urea nitrogen, and net energy utilization in finishing beef steers**

Cassidy Ross ¹, Erin R. DeHaan ¹, Forest L. Francis ¹, Becca Grimes Francis ¹, Thiago Ribeiro ¹, Zachary K. Smith ¹, Warren C. Rusche ¹

¹South Dakota State University

4:15 p.m. 104 **Effects of providing vitamin and mineral supplementation throughout gestation on subsequent F1 replacement heifer liver and muscle oxygen consumption and mitochondrial function throughout pregnancy**

Kathryn RM Slavick ¹, Ana Clara Baiao Menezes ², Jennifer L. Hurlbert ³, Kazi Sarjana Safain ¹, Kerri A. Bochantin ¹, Julia Travassos da Silva ¹, Pauliane Pucetti ¹, James D. Kirsch ¹, Kevin K. Sedivec ¹, Kendall C. C. Swanson ¹, Carl R. Dahlen ³

¹North Dakota State University, ²South Dakota State University, ³Department of Animal Sciences, Center for Nutrition and Pregnancy, North Dakota State University

4:30 p.m. 105 **Water quality analysis and flow rate comparison between wean-finish swine barns**

olivia CS kittle ¹, Suzanne M. Leonard ², Mark Knauer ², Glen Almond ¹

¹NCSU, ²North Carolina State University

Ruminant Nutrition I

2:00 PM - 3:30 PM

Meeting Room K-O-L-P

2:00 p.m. 56 **Metabolic status of respiratory disease challenged beef steers altered by intranasal Zn and vitamin A treatments**

Emma L. Rients ¹, Carlos Franco ¹, Jodi McGill ¹, Stephanie L. Hansen ¹

¹Iowa State University

2:15 p.m. 57 **Effect of diet mixing strategies on growth performance and carcass characteristic in feedlot steer**

Naomi Waldon ¹, Lyda Garcia ¹, Doug Clevenger ¹, Alejandro E. Relling ¹

¹The Ohio State University

2:30 p.m. 58 **Evaluation of a phytogenic blend on growth performance, health, carcass traits, and efficiency of dietary net energy utilization in finishing beef steers**

Thiago Lauro Maia Ribeiro ¹, Becca Grimes Francis ¹, Zachary K. Smith ¹, Forest L. Francis ¹, Cassidy Ross ¹, Jeff Heldt ², Warren C. Rusche ¹, Emma H. Wall ³

¹South Dakota State University, ²Selko, ³Nutreco

2:45 p.m. 59 **Effects of serial harvest on growth and carcass characteristics of beef x dairy crossbred steers**

Grant I. Crawford ¹, Lee-Anne J. Walter ¹, Alyssa B. Word ², Kendall Karr ³, Ben P. Holland ², John P. Hutcheson ¹, Wade T. Nichols ¹, Marshall N. Streeter ¹, Brandon L. Nuttelman ¹

¹Merck Animal Health, ²Cactus Operating LLC, ³Kendall Karr Consulting

3:00 p.m. 60 **Effects of phase feeding rolled hybrid rye on feedlot performance in backgrounded beef steers**

Riley Leeson¹, Erin R. DeHaan¹, Justin Delver¹, Forest L. Francis¹, Becca Grimes Francis¹, Thiago Ribeiro¹, Zachary K. Smith¹, Warren C. Rusche¹

¹South Dakota State University

3:15 p.m. 61 **Effects of botanical composition on grazing system management, forage quality, forage availability, and ewe performance**

Emma G. Prybylski¹, Alyssa Brown¹, Lauren Neuleib², Joshua C. McCann³, Nicholas Heller², Jennifer E. Earing²

¹University of Illinois Champaign-Urbana, ²Illinois State University, ³University of Illinois Urbana-Champaign

Nonruminant Nutrition III - Enzymes

2:00 PM - 5:15 PM

Ballroom D

2:00 p.m. 43 **Evaluating the effects of HiPhorius phytase added in diets at or below the P requirement on nursery pig growth performance and bone mineralization**

Julian Arroyave Jaramillo¹, Macie E. reeb¹, Jon R. Bergstrom², Jordan T. Gebhardt¹, Robert D. Goodband¹, Mike D. Tokach¹, Joel M. DeRouchey¹, Jason C. Woodworth¹

¹Kansas State University, ²dsm-firmenich

2:15 p.m. 44 **Investigation of the nutritional and functional roles of mannanase on intestinal health and growth of newly weaned pigs fed a low-cost formulated diet**

Jonathan T. Baker¹, Adebayo O. Sokale², Brent Frederick³, Sung Woo Kim¹

¹North Carolina State University, ²BASF Corporation, ³Cargill

2:30 p.m. 45 **Investigation of the nutritional and functional roles of a combinational use of xylanase and β -glucanase on intestinal health and growth of nursery pigs**

Hyunjun Choi¹, Yesid Garavito Duarte¹, Guilherme Pasquali², Sung Woo Kim¹

¹North Carolina State University, ²BASF SE

2:45 p.m. 46 **Efficacy of a biosynthetic 6-phytase depending on basal diet composition in weaning piglets**

Maamer Jlali¹, Sarper Ozbek¹, Estelle Devillard¹

¹Adisseo France SAS

3:00 p.m. 47 **Application of a 'high' or 'low' energy matrix to a nutrient-reduced diet supplemented with a novel phytase maintained growth performance and conferred production and sustainability benefit**

Ester Vinyeta¹, Vanessa Lagos², Francesc Molist², Deepak E. E Velayudhan¹, Yueming Dersjant-Li¹

¹Danisco Animal Nutrition & Health (IFF), ²Schothorst Feed Research

3:15 p.m. 48 **Use of 4500 FTU/kg of phytase on performance and blood parameters of finishing pigs**

Alexandre Barbosa de Brito ¹, Miliane Alves da Costa ², Ingrid Y. Martinez Rojas ², Gustavo Cordero ², Gilson A. Gomes ², Tiago Santos ²

¹AB VISTA, ²AB Vista

3:30 p.m. **Nonruminant Nutrition III - Enzymes Break**

3:45 p.m. 49 **Effects of xylanase or a stimbiotic on growth performance and total tract digestibility of nutrients by pigs weaned from sows fed a lactation diet without or with xylanase**

Jessica P. Acosta ¹, Gemma Gonzalez Ortiz ², Hans H. Stein ³

¹University of Illinois at Urbana Champaign, ²AB Vista, ³University of Illinois at Urbana-Champaign

4:00 p.m. 50 **Feeding a multi-carbohydrase improves mortality, morbidity and variability of growing pigs fed varying levels of DDGS.**

Mark A. Giesemann ¹, Darlene J. Bloxham ², Marcio Ceccantini ³

¹Adisseo USA, Inc, ²Adisseo North America, ³ADISSEO BRASIL NUTRIÇÃO ANIMAL LTDA

4:15 p.m. 51 **Application of an energy and nutrient matrix to a mixed cereals-based diet supplemented with a novel phytase and xylanase-β-glucanase achieved a production benefit from wean-to-finish in pigs**

Deepak E. E Velayudhan ¹, Yueming Dersjant-Li ¹, Saad Gilani ¹, Rachael Hardy ¹, Ester Vinyeta ¹, Georg Dusel ²

¹Danisco Animal Nutrition & Health (IFF), ²University of Applied Sciences Bingen

4:30 p.m. 52 **Alleviating antinutritional effects of high soybean meal diets for nursery pigs through multienzyme and acidifier supplementation**

Ashir Foreman Atoo ¹, Andres Bolivar-Sierra ¹, Jorge Y. Perez Palencia ¹, Rob Patterson ², Hari B. Krishnan ³, Crystal L. Levesque ⁴, Jinsu Hong ¹

¹South Dakota State University, ²CBS Bioplatfroms, ³USDA, ⁴South Dakota State Univeristy

4:45 p.m. 53 **Evaluation of the impact of high doses of phytase and marketing strategy on performance and carcass characteristics of late finishing pigs in commercial settings**

Izadora Batista Kuneff ¹, David Rosero ², Ximena Paz ³, Samuel F. Leiva ³, Pete Wilcock ⁴, Eric van Heugten ¹, Amanda Elsbernd ³

¹Department of Animal Science, North Carolina State University, ²Department of Animal Science, Iowa State University, ³The Hanor Company, Inc., ⁴AB Vista

5:00 p.m. 54 **Effects of a new biosynthetic 6-phytase supplementation on nutrient digestibility, phytate disappearance and growth efficiency in weaning piglets fed low in calcium and digestible phosphorus diets**

Maamer Jlali ¹, Sarper Ozbek ¹, Estelle Devillard ¹

¹Adisseo France SAS

David Baker Symposium: Roles of Methionine in nutrition

2:00 PM - 5:30 PM

Ballroom B

2:00 p.m. **David Baker Symposium Introduction**

2:05 p.m. 32 **Overview over Methionine Metabolism: Implications in Swine Nutrition and Health**

Shengfa F. Liao ¹, Emmanuel Oladejo ²

¹Department of Animal & Dairy Sciences, Mississippi State University, ²Mississippi State University

2:45 p.m. 33 **1-carbon metabolism: methionine and more**

Jaap Van Milgen ¹

¹PEGASE, INRAE, Institut Agro, France

3:25 p.m. **David Baker Symposium Break**

3:40 p.m. 34 **DPP Lecture: Evidence of methionine effects on health and immune response of animals**

Daniel A. Columbus ¹

¹Prairie Swine Centre, Inc.

4:20 p.m. 35 **Role and mechanism of supplemental methionine in metabolic stress of broilers raised at high ambient temperature or stock density**

Xingen Lei ¹

¹Cornell University College of Agricultural and Life Science

5:00 p.m. 36 **Effects of grinding method on ileal digestibility of amino acids in different short-season corn cultivars fed to growing pigs**

Jinyoung Lee ¹, Martin Nyachoti ¹

¹University of Manitoba

Tuesday, March 12, 2024

Nonruminant Nutrition IV - Digestibility

8:00 AM - 10:00 AM

Meeting Room M-N-Q-R

8:00 a.m. 153 **Standardized ileal digestibility of amino acids and concentration of metabolizable energy in three sources of corn protein fed to weanling pigs**

Nelson C. Ruiz-Arias ¹, Su A Lee ¹, Hans H. Stein ¹

¹University of Illinois at Urbana-Champaign

8:15 a.m. 154 **Reduction of particle size of field peas increases net energy and digestibility of starch when fed to growing pigs**

Jimena A. Ibagon ¹, Su A Lee ¹, Hans H. Stein ¹, Martin Nyachoti ²

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

8:30 a.m. 155 **Standardized ileal digestibility of amino acids in soybean meal, fermented soybean meal, and soy protein concentrate fed to nursery pigs**

Yoon Soo Song¹, Beob Gyun Kim¹

¹Konkuk University

8:45 a.m. 156 **Growth performance, energy, and nutrient digestibility of nursery pigs fed high-shear dry extruded corn and soymeal**

Thomas A. Crome¹, Nicholas K. Gabler¹

¹Iowa State University

9:00 a.m. 157 **Effects of increasing dietary protein concentration on digestibility of amino acids by growing pigs**

Su A Lee¹, Hans H. Stein¹

¹University of Illinois at Urbana-Champaign

9:15 a.m. 158 **Nutrient digestibility in growing pigs fed a corn distillers dried grains with soluble (cDDGS)-based diet with multi-enzyme supplementation**

Joseph Halbur¹, Jinsu Hong¹, Sara Llamas-Moya², Tri Duong², Mark J. Bertram³, Amy L. Petry⁴, Eric Weaver¹

¹South Dakota State University, ²Kerry Inc., ³First Choice Livestock, ⁴University of Missouri

9:30 a.m. 159 **Concentrations of energy in pistachio shell powder fed to gestating sows and lactating sows**

Yeonwoo Kim¹, Su A Lee², Hans H. Stein²

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

9:45 a.m. 160 **Meat and bone meal autoclaving time-related reduction in amino acid digestibility for broiler chickens and growing pigs**

Jung Y. Sung¹, Darryl Ragland², Markus K. Wiltafsky-Martin³, Olayiwola Adeola¹

¹Department of Animal Sciences, Purdue University, ²Purdue University, ³Evonik Operations

Growth, Development, Muscle Biology and Meat Science

8:00 AM - 10:00 AM

Hall of Ideas F/I

8:00 a.m. 125 **Effects of *Saccharmyces* yeast postbiotics on nurse pig Muscle fiber cross-sectional area and oxidative capacity**

Daniela A. Alambarrio¹, Mathew A. Vaughn², Sung Woo Kim³, John M. Gonzalez¹

¹University of Georgia, ²Puretein Bioscience, ³North Carolina State University

8:15 a.m. 126 **A nutritional solution based on calcidiol (25-OH-D₃, HyD®) and triterpenoids affects muscle protein synthesis pathways in grower-finisher pigs**

Laura Payling¹, Luis F Romero¹, Ursula M McCormack², Maria C Walsh², Laurent Roger²,

Estefania Perez Calvo²

¹Biofractal, ²dsm-firmenich

8:30 a.m. 127 **Utilizing predictive models for bone mineral content and bone mineral density as a tool to assess dietary phosphorous**

William E. Taylor¹, Thomas A. Crome¹, Grace C. McKibben¹, Jason W. Ross¹, Steven M. Lonergan¹, Juan P. Steibel², Nicholas K. Gabler¹

¹Iowa State University, ²ISU

8:45 a.m. 128 **Effects of dietary hybrid rye on quality and consumer acceptability of pork from pigs raised under organic conditions**

Megan Kavanagh¹, Gabriella Lima², Adrienne Hilbrands¹, Ryan Cox¹, Lee J. Johnston¹, Yuzhi Li¹

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

9:00 a.m. 129 **Evaluating effects of myostatin loss-of-function mutation on piglets for potential causes of early mortality**

Elli S. Burris¹, Anna Dilger²

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

9:15 a.m. **Growth, Development, Muscle Biology and Meat Science Break**

9:30 a.m. 130 **Parity affects mammary development in late-pregnant swine**

Chantal Farmer¹, Jakob C. Johannsen², Caroline Gillies³, Lee-Anne Huber³, Russell C. Hovey⁴

¹Agriculture and Agri-Food Canada, Sherbrooke R & D Centre, ²Aarhus University, Dept. of Animal and Veterinary Sciences, ³University of Guelph, Dept. of Animal Bioscience, ⁴University of California, Davis

9:45 a.m. 131 **DNA methylation profile in bovine fetal liver is affected by maternal vitamin and mineral supplementation during early gestation**

Muhammad Anas¹, Alison K. Ward², Kacie L L. McCarthy³, Pawel P. P. Borowicz¹, Lawrence P. P. Reynolds¹, Joel S. Caton⁴, Carl R. Dahlen⁴, Wellison J. j. S. Diniz⁵

¹North Dakota State University, ²University of Saskatchewan, ³University of Nebraska, ⁴Department of Animal Sciences, Center for Nutrition and Pregnancy, North Dakota State University, ⁵Department of Animal Sciences, Auburn University

10:00 a.m. 132 **Carcass merit, primal cutout, and retail yield of Holstein and Holstein x SimAngus finished calves.**

Teagan Schnurbusch¹, Zachary D. Callahan¹, Amy L. Petry¹, Bryon R. Wiegand¹

¹University of Missouri

10:15 a.m. 133 **The effect of sire lines and endpoint cooking temperature on consumer eating experience and visual appeal in pork loin chops**

Jonathan J. McDonald¹, Brandon Fields², Bailey Harsh¹, Anna Dilger¹

¹University of Illinois Urbana-Champaign, ²PIC

10:30 a.m. 134 **Does inclusion of high oleic soybeans in a swine finishing ration influence lipid oxidation and Consumer taste panel preference?**

Natalie Acosta Castellanos¹, Robert Maddock², Robert C. Thaler³, Jennifer M. Young¹, Shane Mueller⁴, Kim Koch⁴, Eric P. Berg¹

¹North Dakota State University, ²American Meat Science association, ³South Dakota State University, ⁴Northern Crops Institute

Nonruminant Nutrition V - Nursery I

8:00 AM - 11:00 AM

Hall of Ideas G/J

8:00 a.m. 135 **Effects of altering diet acid-binding capacity-4 (ABC-4) with specialty soy protein sources or acidifiers on nursery pig performance and fecal dry matter**

Ethan Stas¹, Mike D. Tokach¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Robert D. Goodband¹, Jordan T. Gebhardt¹

¹Kansas State University

8:15 a.m. 136 **Effects of acid-binding capacity in low-zinc diets on growth performance of weaned pigs**

Jose Landero¹, L.F. Wang², Lingjun Zhu², Jon R. Bergstrom³, Malachy Young¹, Ruurd T. Zijlstra²

¹Gowans Feed Consulting, ²University of Alberta, ³dsm-firmenich

8:30 a.m. 137 **Impact of dietary soybean-mediated trypsin inhibitor concentrations on nursery pig performance**

Mitchell J. Nisley¹, Joel D. Spencer², Omarh F. Mendoza³, Hari B. Krishnan⁴, Kayla A. Miller¹, Nicholas K. Gabler¹

¹Iowa State University, ²United Animal Health, ³The Maschhoffs LLC, ⁴USDA

8:45 a.m. 138 **Growth performance and physiological response of nursery pigs fed a high canola meal diet with acidifiers**

Katlyn A. McClellan¹, Jorge Y. Perez-Palencia¹, Eric Weaver¹, Crystal L. Levesque², Jinsu Hong¹

¹South Dakota State University, ²South Dakota State University

9:00 a.m. 139 **Effect of dietary crude protein concentration and sensory feed additive on nursery pig growth performance**

Kara Pounds¹, Brian T. Richert¹, Taw Scaff¹, Alexandra Fisk¹, Mekenzie R. Cecil¹, Emily Otto-Tice², Allan P. Schinckel¹

¹Purdue University, ²Lucta

9:15 a.m. **Nonruminant Nutrition V - Nursery I Break**

9:30 a.m. 140 **Response of 6 to 13 kg nursery pigs to increasing SID Arg:Lys**

Dalton C. Humphrey¹, Margaret Putnam¹, Chloe S. Hagen¹, Caitlyn Wileman¹, Keith D. Haydon², Laura L. Greiner¹

¹Iowa State University, ²CJ Bio America

9:45 a.m. 141 **Determination of the optimum standardized ileal digestible lysine for nursery pigs fed high levels of dietary fiber**

Morgan Hart ¹, Henrique S. Cemin ¹, Jose A. Soto ², Sharlie A. Hansen ¹, Ernie L. Hansen ¹

¹Hubbard Feeds, ²Alltech

10:00 a.m. 142 **Evaluation of low SID lysine diets fed to enteric health challenged pigs on wean-to-finish performance**

Kayla A. Miller ¹, Omarh F. Mendoza ², Caleb M. Shull ³, Eric R. Burrough ¹, Nicholas K. Gabler ¹

¹Iowa State University, ²The Maschhoffs LLC, ³The Maschhoffs, LLC

10:15 a.m. 143 **Effect of increasing dietary net energy content at a constant lysine on feed intake and performance of 7- to 11-kg and 11- to 20-kg pigs**

John K. Htoo ¹, S. M. S. Mendoza ², Joaquin Morales ³

¹Evonik Operations GmbH, ²Evonik Corporation, ³Animal Data Analytics

10:30 a.m. 144 **Bioavailability of calcium salt of hydroxy analogue of methionine relative to DL-methionine to support growth performance of 11- to 20-kg pigs**

Balachandar Jayaraman ¹, Joaquin Morales ², Maria Rodriguez ², John K. Htoo ³

¹Evonik Methionine (SEA) Pte., Ltd, ²Animal Data Analytics, ³Evonik Operations GmbH

10:45 a.m. 145 **Performance, postweaning diarrhea, and apparent total tract nutrient digestibility responses of weanling pigs to nucleotide supplementation of low-protein diets**

Abiola S. Lawal ¹, Tobi Z. Ogunribido ¹, Yuechi Fu ¹, Olayiwola Adeola ¹, Kolapo M. Ajuwon ¹

¹Department of Animal Sciences, Purdue University

Billy Day Symposium: Gene Editing - Sponsored by Billy N. Day Appreciation Club

8:00 AM - 11:45 AM

Ballroom C

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

8:05 a.m. 115 **Gene editing: Where are we on campus and where can it go?**

Randall S. Prather ¹

¹University of Missouri-Columbia

8:35 a.m. 116 **Gene editing: How are we thinking about it?**

Tom Rathje ¹

¹DNA Swine Genetics

9:05 a.m. 117 **Gene editing: Where are we on the farm and where are we going?**

Dr. Ben Beaton ¹

¹Genetics

9:35 a.m. **Billy Day Symposium Break**

10:00 a.m. 118 **Gene editing: A European perspective**

Dr. Antonia Gil ¹

¹University of Murcia, Spain

10:30 a.m. 119 **Gene editing: A Japanese perspective**

Dr. Hiroaki Funahashi ¹

¹Okayama University, Japan

11:00 a.m. 120 **Gene editing: From the general public perspective**

Alison L. Van Eenennaam ¹

¹University of California, Davis Department of Animal Science

11:30 a.m. **Billy Day Symposium Q&A**

**Nonruminant Nutrition Symposium I:
Soybean Meal perspectives-from energy to sustainability
Sponsored by Gary L. Allee Appreciation Club**

8:00 AM - 11:45 AM

Ballroom A

8:00 a.m. Nonruminant Nutrition Symposium I Introduction - Sponsored by Gary L. Allee Appreciation Club

8:05 a.m. 106 Net energy of soybean meal
Hans H. Stein, University of Illinois at Urbana-Champaign

8:35 a.m. 107 Soybean meal energy value under field conditions: where are we at and where are we going?
Henrique S. Cemin ¹, Jose A. Soto ², Ernie L. Hansen ¹, Mike D. Tokach ³
¹Hubbard Feeds, ²Alltech, ³Kansas State University

9:05 a.m. 108 Estimating net energy of soybean meal for 47 to 110 kg growing pigs using a growth assay
Jiyao Guo ¹, Apichat Wantanasak ¹, Fengrui Zhang ¹, Taiji Wang ¹, Gary Stoner ¹
¹CP Group

9:20 a.m. 109 Evaluation of net energy, standardized ileal digestible lysine, and soybean meal content interaction in 13 to 25 kg pigs using a central composite design
Hilario M. Cordoba ¹, Mike D. Tokach ¹, Jason C. Woodworth ¹, Robert D. Goodband ¹, Joel M. DeRouchey ¹, Jordan T. Gebhardt ¹, Henrique S. Cemin ², Jose A. Soto ³
¹Kansas State University, ²Hubbard Feeds, ³Alltech

9:40 a.m. 110 Effects of increasing levels of soybean meal in nursery diets on growth performance and fecal dry matter of 10- to 25-kg pigs
Jamil Faccin ¹, Mike D. Tokach ¹, Joel M. DeRouchey ¹, Jordan T. Gebhardt ¹, Robert D. Goodband ¹, Jason C. Woodworth ¹
¹Kansas State University

9:50 a.m. Nonruminant Nutrition Symposium I Break

10:05 a.m. 111 Current and future usage of soybean meal in swine diets in China
Junjun Wang, MAFIC

10:35 a.m. 112 Invited Speaker Pedro Urriola
Pedro Urriola, University of Minnesota

11:05 a.m. 113 Evaluation of high soybean meal diets with inclusion of dietary enzymes on the effect of growth performance and greenhouse gas emissions
Caitlyn Wileman ¹, Dalton C. Humphrey ¹, Kenwood Scoggin ², Steven Trabue ², Jon R. Bergstrom ³, Estefania Perez-Calvo ⁴, Laura L. Greiner ¹
¹Iowa State University, ²NSTL-ARS-USDA, ³dsm-firmenich, ⁴DSM-Firmenich

11:20 a.m. 114 Effects of higher levels of soy protein and methionine on periparturient health of sows
Lauren Olson ¹, Moul Dey ¹, Eric Weaver ¹
¹South Dakota State University

**Animal Behavior, Health and Well-Being Symposium:
Prop 12 has passed: What animal welfare regulations come next?**

8:00 AM - 12:00 PM
Hall of Ideas E/H

**Harlan Ritchie Symposium:
How will Midwestern beef cattle production shift due to climate change?**

8:00 AM - 12:00 PM
Ballroom B

**Ruminant Nutrition II
8:30 AM - 9:45 AM
Meeting Room K-O-L-P**

8:30 a.m. 161 **Effect of replacement of dried distillers grains plus solubles with increasing extruded and expelled soybean meal on feedlot performance and carcass characteristics in finishing steers**

Becca Grimes Francis ¹, Justin Delver ¹, Forest L. Francis ¹, Erin R. DeHaan ¹, Thiago Ribeiro ¹, Cassidy Ross ¹, Warren C. Rusche ¹, Zachary K. Smith ¹
¹South Dakota State University

8:45 a.m. 162 **Effect of molasses-based liquid supplement vs. corn-based dry supplement on beef cattle feedlot performance, carcass characteristics, and intestinal length**

Lester R. Nolasco ¹, Tyler J. Vincent ¹, Howard M. Blalock ², Jon P. Schoonmaker ¹
¹Purdue University, ²Quality Liquid Feeds

9:00 a.m. 163 **Impact of feeding wet or dry traditional or fractionated (Solbran®) distillers grains on feedlot cattle performance and carcass characteristics**

Debora Gomes Sousa ¹, Rebecca L. McDermott ¹, Mitch M. Norman ², James C. MacDonald ², Rick A. Stock ², Rayan Mass ³, Galen E. Erickson ¹
¹University of Nebraska–Lincoln, ²University of Nebraska-Lincoln, ³ICM

9:15 a.m. 164 **Impact of varying dietary inclusion of modified distillers grains plus solubles weekly compared to constant inclusion on feedlot cattle performance and carcass characteristics**

Debora Gomes Sousa ¹, Rebecca L. McDermott ¹, Mitch M. Norman ², James C. MacDonald ², Rick A. Stock ², Galen E. Erickson ¹

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

9:30 a.m. 165 **Comparing corn earlage to a blend of corn silage and grain when fed at two different inclusions for finishing cattle**

Garrett Lemon ¹, Rebecca L. McDermott ², Galen E. Erickson ², Pablo L. Loza ¹

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

**Genetics, Genomics and Bioinformatics Symposium:
Phenomics for Management and Genetics**

9:00 AM - 11:30 AM

Ballroom D

9:00 a.m. **Genetics, Genomics and Bioinformatics Symposium Introduction**

9:05 a.m. 121 **Evaluation of sensing technologies as indicator traits for feed intake in dairy cattle**

James E. Koltes ¹

¹Iowa State University

9:35 a.m. 122 **Automated animal biometrics acquisition for improved breeding**

Isabella C. F. S. Condotta ¹

¹University of Illinois at Urbana-Champaign

10:05 a.m. **Genetics, Genomics and Bioinformatics Symposium Break**

10:20 a.m. 123 **Phenomics enabled quantitative genetic modeling of complex traits**

Gota Morota ¹

¹School of Animal Sciences, Virginia Polytechnic Institute and State University

10:50 a.m. 124 **Artificial Intelligence for high-throughput phenotyping and farm management**

João Dorea ¹

¹University of Wisconsin-Madison

Nonruminant Nutrition VI - Mycotoxins and Models

10:00 AM - 11:45 AM

Meeting Room K-O-L-P

10:00 a.m. 146 **Comparing feeding strategies during heat stress in finishing pigs using a stochastic swine model**

Noud Aldenhoven ¹, Neil W. Jaworski ¹, Nestor A. Gutierrez ¹, Neil S. Ferguson ¹

¹Trouw Nutrition Innovation

10:15 a.m. 147 **The interaction between growth and immunity: Insights into the immune response of finisher pigs with divergent feed efficiency**

Laura Payling¹, Luis F Romero¹

¹Biofractal

10:30 a.m. 148 **Evaluating water characteristics and their effects on reducing water pH using citric acid**

Maxwell L. Corso¹, Jason C. Woodworth², Mike D. Tokach², Jordan T. Gebhardt², Joel M. DeRouchey², Robert D. Goodband²

¹Kansas State University Applied Swine Nutrition, ²Kansas State University

10:45 a.m. 149 **Development of a leaky gut model: Impact of 24-hour feed restriction on ileal expression of tight junction proteins in weaned pigs**

Sarah E. Schuling¹, Megan N. Engeseth¹, Sue M. Knudtson¹, Ran Song¹, Dan E. Schimek¹

¹NutriQuest

11:00 a.m. 150 **Development of a leaky gut model: Meta-analysis of plasma and fecal markers of leaky gut**

Sarah E. Schuling¹, Megan N. Engeseth¹, Sue M. Knudtson¹, Ran Song¹, Dan E. Schimek¹

¹NutriQuest

11:15 a.m. 151 **Use of a clay and algae-based decontaminant on sows naturally exposed to mycotoxins in gestation and lactation**

Marie Gallissot¹, Jeremy Perez², Eric Parr², Michael Welch², Paul Olsen³, Maria Rodriguez¹

¹Olmix Group, ²Carthage Innovative Swine Solutions, ³Olmix NA

11:30 a.m. 152 **Reducing the bioavailability of a mix of mycotoxins in broiler chickens with a clay- and algae-based decontaminant**

Marie Gallissot¹, Sofie Rutjens², Maria Rodriguez¹, Mathias Devreese²

¹Olmix Group, ²Ghent University, Faculty of Veterinary Medicine

Equine Translational
10:30 AM - 11:30 AM
Meeting Room M-N-Q-R

10:30 a.m. 298 **Equine Translational Invited Speaker 1**

11:00 a.m. 299 **Equine Translational Invited Speaker 2**

Genetics, Genomics and Bioinformatics

1:15 PM - 3:00 PM

Hall of Ideas G/J

1:15 p.m. 225 **Genomic diversity of Katahdin sheep and impacts on genomic prediction**

Sara M. Nilson ¹, Joan M. Burke ², Gabrielle M. Becker ³, Brenda M. Murdoch ³, Jessica L. Petersen ¹, Ronald M. Lewis ¹

¹University of Nebraska - Lincoln, ²USDA, ARS, Dale Bumpers Small Farms Research Center,

³University of Idaho

1:30 p.m. 226 **Oral and rumen microbiome characterization to predict host phenotypes**

Seidu Adams ¹, Matthew L. Spangler ¹, Samodha Fernando ¹

¹University of Nebraska-Lincoln

1:45 p.m. 227 **Comparative analysis of rumen bacterial communities from bison heifers fed two forage-based diets of different quality**

Anlly M. Fresno Rueda ¹, Benoit St-Pierre ¹, Carter Kruse ²

¹South Dakota State University, ²Turner Institute of Ecoagriculture

2:00 p.m. 228 **The effect of temperature-humidity index in different pregnancy stages on litter traits in Taiwan Landrace sows**

Kai-Hsiang Lin ¹, Billy Flowers ², Jicai Jiang ², Mark Knauer ², En-Chung Lin ¹

¹National Taiwan University, ²North Carolina State University

2:15 p.m. 229 **Effects of sire line on survivability traits of commercial pigs sired by PIC®800 or a North American competitor Duroc Line from birth to market**

Isaiah T. Spath ¹, Erin Little ², Roy Edler ², Luis E. Zaragoza ¹, Michelle Wuebker ¹, Matthew Spindler ¹, Danielle Wilson-Wells ¹

¹Genus PIC, ²Pipestone Research

2:30 p.m. 230 **Using phenotypes with uncertain identification leveraging computer vision models**

Mina Shumaly ¹, Juan P. Steibel ²

¹Iowa State University, ²ISU

2:45 p.m. 231 **Anomaly detection for breed purity analysis**

Xiaohan Jiang ¹

¹Iowa state university

Nonruminant Nutrition Symposium II: Fiber and its benefits in swine production

Sponsored by ABVista

1:15 PM - 5:00 PM

Ballroom A

1:15 p.m. Nonruminant Nutrition Symposium II Introduction

1:20 p.m. 166 Beyond Solubility: Navigating the Complex Landscape of Dietary Fiber in Swine Digestion and Physiology

Amy L. Petry¹, Hannah E. Miller²

¹University of Missouri, ²South Dakota State University

1:50 p.m. 167 The benefit and challenges of fiber in the nursery pig diet

Nicholas K. Gabler¹

¹Iowa State University

2:20 p.m. 168 Effects of feeding barley-based diets differing in fermentable starch and fiber on nutrient digestion and body composition in weaned pigs

Joaquin J. Sanchez-Zannatta¹, L.F. Wang¹, Eduardo Beltranena¹, Aaron D. Beattie², Rex N. Newkirk², Ruurd T. Zijlstra¹

¹University of Alberta, ²University of Saskatchewan

2:35 p.m. 169 The impact of corn-based fiber on intestinal morphology and disaccharidase activity in growing pigs

Hannah Miller¹, Rachel Self¹, Cassidy Sasser², Amelia Balser², Rand R. Broadway³, Nicole C. Burdick Sanchez³, Jeff A. Carroll³, Michael Cruz Penn⁴, Amy L. Petry¹

¹University of Missouri, ²Texas Tech University, ³Livestock Issues Research Unit USDA, ⁴School of Veterinary Medicine, Texas Tech

2:50 p.m. Nonruminant Nutrition Symposium II Break

3:05 p.m. 170 Feeding the Modern Sow: Unlocking the Value of Dietary Fiber

David S. Rosero¹

¹Iowa State University

3:35 p.m. 171 Current limitations to implement fiber in U.S. sow and nursery diets; and nutritional strategies to support ideal fiber profile

Laura A. Merriman¹

¹AB Vista

4:05 p.m. 172 Effects of post-MSC DDGS inclusion in gestation diets on total tract nutrient and energy digestibility compared to other fiber sources

Garrin Shipman¹, Jorge Y. Perez Palencia¹, Jinsu Hong¹, Kevin J. Herrick², Melissa L. Jolly-Breithaupt², Crystal L. Levesque³

¹South Dakota State University, ²POET Bioproducts, ³South Dakota State University

4:20 p.m. 172 **Assessing the impact of fiber and antioxidant supplementation during the periparturient period on gilt constipation, piglet viability, and body condition score**

Erick Fuentes Cardona ¹, Hannah Miller ¹, Rachel Self ¹, Ben Haberl ², Cesar A.A. Moura ², Spenser Becker ³, Pete Wilcock ³, Amy L. Petry ¹

¹University of Missouri, ²Iowa Select, ³AB Vista

4:35 p.m. 174 **Nonruminant Nutrition Symposium II Q&A**

Ruminant Nutrition III

1:45 PM - 3:00 PM

Meeting Room K-O-L-P

1:45 p.m. 232 **Evaluation of a phytogenic feed additive with essential oils and plant extracts on growth performance in single sourced steer calves fed a forage-based diet during the initial 53 d receiving period**

Justin Delver ¹, Warren C. Rusche ¹, Zachary K. Smith ¹

¹South Dakota State University

2:00 p.m. 233 **Inclusion of a multispecies fungal feed additive in forage-based diets fed to beef cattle: effects on growth performance and ruminal fermentation**

Alejandro Pittaluga ¹, Alejandro E. Relling ¹

¹The Ohio State University

2:15 p.m. 234 **Evaluation of a phytogenic blend on post-weaning growth performance, health, and sera metabolite responses during the initial 56 d feedlot receiving period in newly-weaned steers**

Thiago Lauro Maia Ribeiro ¹, Zachary K. Smith ¹, Emma H. Wall ², Forest L. Francis ¹, Becca Grimes Francis ¹, Cassidy Ross ¹, Warren C. Rusche ¹, Jeff Heldt ³

¹South Dakota State University, ²Nutreco, ³Selko

2:30 p.m. 235 **Evaluation of an exogenous fibrolytic enzyme combination in forage-based growing diets fed to growing beef cattle**

Madeliene S. Nichols ¹, Grady J. Gullickson ¹, Yssi L. Entzie ¹, Sarah R. Underdahl ¹, Lydia E. Hansen ¹, Jessica Syring ¹, Joshua Wiannecki ¹, Danielle Jensen ¹, Kathlyn Hauxwell ¹, Zachary E. Carlson ¹, Thomas Winders ²

¹North Dakota State University, ²Danisco Animal Nutrition and Health

2:45 p.m. 236 **The effects of replacing dried distillers grains with solubles with heat-treated soybean meal on nutrient intake and digestibility in forage-based diets**

Grady J. Gullickson ¹, Madeliene S. Nichols ¹, Yssi L. Entzie ¹, Lydia E. Hansen ¹, Jessica Syring ¹, Terry Skunberg ¹, Justin Gilbertson ¹, Colin T. Tobin ¹, Kendall C. C. Swanson ¹, Zachary E. Carlson ¹

¹North Dakota State University

Animal Behavior, Health and Well-Being

1:45 PM - 5:00 PM

Hall of Ideas F/I

1:45 p.m. 204 **Detecting subclinical mastitis in meat-breed ewes using infrared thermography**

Gretchen Peckler¹, Sarah J.J. Adcock¹

¹University of Wisconsin Madison

2:00 p.m. 205 **Detection of anemic sheep using ocular conjunctiva images and deep learning technology**

Luara Freitas¹, Rafael Ferreira¹, Anderson A. Alves¹, João R. R. Dorea¹, Claudia Paz²,
Guilherme J. M. Rosa¹

¹University of Wisconsin-Madison, ²Sustainable Livestock Research Center, Animal Science Institute

2:15 p.m. 206 **Evaluation of the effect of oral administration of bivalent V_HH constructs in weaned piglets challenged with enterotoxigenic *Escherichia coli* F4⁺**

Laia Ferreres Serafini¹, Susana Martín Orúe¹, Sandra W. Thrane², Lorena Castillejos Velázquez¹

¹Animal Nutrition and Welfare Service, Department of Animal and Food Science, ²Bactolife A/S

2:30 p.m. 207 **Impacts of beak trimming and dietary fiber on welfare and productivity of laying hens**

Haipeng Shi¹, Samar Tolba¹, Vanessa Leone¹, Sarah J.J. Adcock²

¹University of Wisconsin-Madison, ²University of Wisconsin Madison

2:45 p.m. 208 **The antiviral and immunomodulating properties from glycerides of lauric acid in PRRSV-infected PAM cells**

Darlene J. Bloxham¹, Tim Goossens², Olga Lemâle³, Retno Rahayu⁴, Isaura Christiaens⁴

¹Adisseo North America, ²Adisseo, ³Adisseo NL B.V., ⁴Poulpharm

3:00 p.m. 209 **Influence of litter origin on performance and tail biting in growing-finishing pigs**

Courtney Archer¹, Adrienne Hilbrands¹, Benny E. Mote², Ty B. Schmidt², Lee J. Johnston¹, Yuzhi Li¹

¹University of Minnesota, ²University of Nebraska – Lincoln

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

3:30 p.m. 210 **Sleeping beauties: a daily time budget for individually-housed research pigs at 6-days of age**

Tawni N. Williams-Stroud¹, Ryan N. Dilger¹, Angela R. Green-Miller¹

¹University of Illinois at Urbana-Champaign

3:45 p.m. 211 **Analysis of microbial communities from a commercial-size swine manure pit and their association with production of volatile organic compounds**

Emily Fowler¹, Ryan S. Samuel¹, Benoit St-Pierre¹

¹South Dakota State University

4:00 p.m. 212 **Growth and behavior of Yorkshire gilts exhibiting physiological resilience to weaning stress**

Andrea M. Luttman¹, Catherine W. Ernst¹, Janice M. Siegford¹

¹Michigan State University

4:15 p.m. 213 **Evaluation of tissue depths and thalamic measurements for two captive bolt placements and types on cadaver heads from sows > 200 kg body weight**

Karly N. Anderson¹, Ashlynn A. Kirk², Jennifer Berger³, Arquimides A. Reyes⁴, Ruth Woiwode⁵, Perle E. Zhitnitskiy⁶, Kurt D. Vogel⁴

¹University of Nebraska - Lincoln; University of Wisconsin - River Falls, ²Humane Handling Institute | University of Wisconsin - River Falls, ³Abbyland Pork Pack, ⁴University of Wisconsin - River Falls, ⁵University of Nebraska - Lincoln, ⁶University of Minnesota - College of Veterinary Medicine

4:30 p.m. 214 **Impact of a nutritional water supplement on nursery mortality as determined by different statistical methods and consequences for on-farm application of technology**

Fredrik Sandberg¹, Steve J. England¹, Kevin Soltwedel¹, Pornpim Aparachita¹, Robert Fischer¹, Greg Hartsook¹, Woong Bi Kwon¹

¹Furst-McNess Company

4:45 p.m. 215 **The effect of a *Lactobacillus* fermentation postbiotic on nursery pig growth performance after experimental inoculation with F18 *Escherichia coli***

Michael Welch¹, Danielle Johnson¹, Eric Parr¹, Dustin Boler¹, Steve Pollmann², John Stockham³, Sean Yang³

¹Carthage Innovative Swine Solutions, ²DSP Consulting LLC, ³Verdesian Life Sciences

National Animal Nutrition Program (NANP) Symposium: Data Analytics

2:00 PM - 4:00 PM

Meeting Room M-N-Q-R

2:00 p.m. **National Animal Nutrition Program (NANP) Symposium Introduction**

2:10 p.m. 244 **Good Practices in Meta-Analysis**

Jen L. Ellis¹

¹University of Guelph

2:50 p.m. 245 **Modeling Growth: Considering Over-Time and Individual Variation**

Izabelle A.M.A. Teixeira¹

¹University of Idaho

3:30 p.m. **National Animal Nutrition Program (NANP) Symposium Roundtable Discussion**

Swine Translational I

2:00 PM - 4:00 PM

Hall of Ideas E/H

2:00 p.m. 216 **Is weaning body weight more important than early post-weaning feed intake? – A meta-analysis exploring electronic feeding stations data**

Lluís Fabà¹, Tetske G. Hulshof², G B. G Balemans³, Hubert M. J. van Hees²

¹Trouw Nutrition, ²Trouw Nutrition R&D, ³Trouw Nutrition

2:15 p.m. 217 **Weaning weight associated with improved nursery pig growth rate.**

Michelle McCallum¹, Gregory Krahn¹, Julie Mahoney¹, Rodney Hinson¹, Chris L. Eden¹

¹United Animal Health

2:30 p.m. 218 **Weaning weight associated with improved performance of grow-finish pigs**

Gregory Krahn¹, Michelle McCallum¹, Julie Mahoney¹, Rodney Hinson¹, Chris L. Eden¹

¹United Animal Health

2:45 p.m. 219 **Effect of stocking density on F1 Gilt grow-finish performance**

Rachel Self¹, Clara K. Henry², Christine Mainquist-Whigham³, Amanda Cross⁴, Ethan Stephenson³, Brady McNeil⁴

¹University of Missouri, ²Michigan State University, ³Pillen Family Farms, ⁴DNA Genetics

3:00 p.m. **Swine Translational I Break**

3:15 p.m. 220 **Litter performance, serum collagen, and hormone concentrations in prolapsed and non-prolapsed sows**

Jared A. Harshman¹, Scott D. Carter¹, Kyle Coble²

¹Oklahoma State University, ²JBS Live Pork

3:30 p.m. 221 **Impact of parity on stall utilization in free access stall systems**

Simon A. Collier¹, Andrea M. Luttman¹, Janice M. Siegford¹, Catherine W. Ernst¹

¹Michigan State University

3:45 p.m. 222 **Effect of electronically controlled floor cooling pads on thermoregulatory performance of Duroc boars during the summer heat stress period**

Daphne Licuan¹, Allan P. Schinckel², Jamie Hundley³, RJ Nepomuceno⁴, Matt Robins⁴, Randolph Crasto⁴, Bradley A. Didion⁵, Michael Kleve-Feld⁶, Kara R. Stewart²

¹Purdue University Department of Animal Sciences, ²Purdue University, ³Pig Improvement Company Inc., ⁴Innovative Heating Technology, ⁵Genus plc, ⁶PIC North America

Nonruminant Nutrition VIII - Nursery II

2:00 PM - 4:45 PM

Ballroom D

2:00 p.m. 186 **Evaluation of the effects of a *Lactobacillus* postbiotic product (Lumensa™) in medicated and non-medicated nursery pig diets**

Thomas E. Weber¹, Julie Salyer², Sean Yang³, John Stockham³, Steve Pollmann⁴

¹Kent Nutrition Group, ²Kalmbach Feeds, ³Verdesian Life Sciences, ⁴DSP Consulting LLC

2:15 p.m. 187 **Polyphenols as a partial replacement for vitamin E in nursery pig diets**

Zhong-Xing Rao¹, Mike D. Tokach², Jason C. Woodworth², Joel M. DeRouchey², Robert D. Goodband², Apoorva Shah³, Brandon Foley³, Karsten Kjeldsen⁴, Grete Brunsgaard⁴, Jordan T. Gebhardt²

¹IFF (Danisco animal nutrition), ²Kansas State University, ³SAM Nutrition, ⁴R2 Agro

2:30 p.m. 188 **A combination of green tea and butyric acid as a potential alternative for zinc oxide improves gut microbiota composition and growth performance in weaning pigs**

Sungbo Cho¹, Robie Vasquez¹, Ji Hoon Song¹, Dae-Kung Kang¹, In Ho Kim¹

¹Dankook University

2:45 p.m. 189 **Combination of organic acid and monoglyceride blends improved growth performance in nursery pigs with and without added antibiotics and ZnO**

Ying Chen¹, Mark Whitney¹, Ross Wolfenden¹

¹Eastman Chemical Company

3:00 p.m. 190 **Phytogenic feed additive improved growth performance and health of nursery pigs in diets with and without combination of several feed additives**

Sabrina May¹, Caroline Gonzalez Vega¹, Brooke Smith¹, Kory Moran¹, Ellyn Teddy¹

¹Cargill

3:15 p.m. **Nonruminant Nutrition VIII - Nursery II Break**

3:30 p.m. 191 **Supplementing short- and medium-chain fatty acid-based products increases the health and performance of weaned piglets**

Darlene J. Bloxham¹, Tim Goossens², Joaquin Morales³, Olga Lemâle⁴

¹Adisseo North America, ²Adisseo, ³Animal Data Analytics, ⁴Adisseo NL B.V

3:45 p.m. 192 **Effects of inclusion of a probiotic and/or a postbiotic in diets containing a phytogenic feed additive on growth performance and fecal microbiome composition and function of nursery pigs**

Sabrina May¹, Allison Knoell¹, Caroline Gonzalez Vega¹, Maria I. Sardi¹, Ehsan Khafipour¹

¹Cargill

4:00 p.m. 193 **The effects of mannan oligosaccharides on mortality and full value nursery swine**

Jose A. Soto¹, Henrique S. Cemin², Morgan D. Hart³, Sharlie A. Hansen², Ernie L. Hansen²

¹Alltech, ²Hubbard Feeds, ³Hubbard Feed

4:15 p.m. 194 **Effects of combining plant and yeast extracts with essential oils or protected betaine on performance and health of weaned piglets**

DAVID GUILLOU ¹, DAVID BRILLOUET ¹, JIM BRYTE ¹, NOEMIE LEMOINE ¹

¹MIXSCIENCE

4:30 p.m. 195 **Incidence of porcine ear necrosis in nursery pigs under commercial conditions is reduced with stimbiotic**

Laura A. Merriman ¹, Pete Wilcock ¹, Spenser Becker ¹, Gustavo Cordero ¹

¹AB Vista

Nonruminant Nutrition VII - Nutritional Strategies Under Health Challenge

2:00 PM - 5:00 PM

Ballroom C

2:00 p.m. 175 **Impact of common dietary strategies on piglet growth and scouring with an Enterotoxigenic Escherichia coli F18 challenge**

Chloe S. Hagen ¹, Laura L. Greiner ¹

¹Iowa State University

2:15 p.m. 176 **Impact of dietary crude protein level and water-based arginine on piglet growth and scouring with an Enterotoxigenic Escherichia coli F18 challenge**

Chloe S. Hagen ¹, Laura L. Greiner ¹

¹Iowa State University

2:30 p.m. 177 **Modulation of fecal microbiome by phytogenics, a postbiotic, and mix of organic acids with essential oils in weaned pigs subjected to F18 *Escherichia coli* challenge**

Allison Knoell ¹, Maria I. Sardi ¹, Corinne Schut ², Caroline Gonzalez Vega ¹, Brooke Smith ¹, Zhenbin Zhang ¹, Vahab Farzan ², Ehsan Khafipour ¹

¹Cargill, ²University of Guelph

2:45 p.m. 178 **Effects of L-glutamate and L-aspartate supplementation on systemic and intestinal immune responses of weaned piglets challenged with F18 ETEC**

Supatirada Wongchanla ¹, Sangwoo Park ¹, Kwangwook Kim ², Shuhan Sun ¹, Xunde Li ¹, Yanhong Liu ¹

¹University of California, Davis, ²Michigan State university

3:00 p.m. 179 **Effects of *Saccharomyces* yeast postbiotics on intestinal health of newly weaned pigs challenged with F18+ *E. coli***

Alexa R. Gormley ¹, Marcos Elias Duarte ¹, Sung Woo Kim ¹

¹North Carolina State University

3:15 p.m. Nonruminant Nutrition VII - Nutritional Strategies Under Health Challenge Break

3:30 p.m. 180 **Dietary milk fat globule membrane alters intestinal microbiota of neonatal piglet following lipopolysaccharide challenge and marker of neuroinflammation**

Rui Zheng ¹, Ming Yan ¹, Rebecca Brown ¹, Zhongtang Yu ², Rafael Jiménez-Flores ¹, Sheila K. Jacobi ¹

¹The Ohio State University, ²The Ohio State University

3:45 p.m. 181 **Effects of Soy protein concentrate replacing conventional soybean meal on intestinal health and growth of newly weaned pigs challenged with F18+ *Escherichia coli***
Zixiao Deng¹, Marcos Elias Duarte¹, Sung Woo Kim¹

¹North Carolina State University

4:00 p.m. 182 **Evaluation of the effects of F18 enterotoxigenic *Escherichia coli* intestinal attachment in nursery pigs**

Elizabeth M. Due¹, Eric R. Burrough¹, Emma Helm², Nicholas K. Gabler¹

¹Iowa State University, ²Virginia Polytechnic Institute and State University

4:15 p.m. 183 **Evaluation of phytogenic formulations on intestinal health and the performance of nursery pigs challenged with F18+ *Escherichia coli***

Yesid Garavito Duarte¹, Marcos Elias Duarte¹, Sung Woo Kim¹

¹North Carolina State University

4:30 p.m. 184 **The metabolism of vitamin D is modulated by vitamin C supplementation during Porcine Reproductive and Respiratory Syndrome challenge in post-weaning piglets**

Danyel Bueno Dalto¹, Frédéric Guay², Guay A. Gagnon³, Laetitia Cloutier⁴, Marie-Pierre Létourneau-Montminy²

¹Agriculture and Agri-Food Canada, ²Laval University, ³Montreal University, ⁴Centre de développement du porc du Québec

4:45 p.m. 185 **Maternal live yeast supplementation protects newly weaned piglets against lipopolysaccharide challenge by regulating immune-associated milk proteins**

Yuechi Fu¹, Theresa M. Casey¹, Timothy A. Johnson¹, Jun Xie², Olayiwola Adeola¹, Kolapo M. Ajuwon¹

¹Department of Animal Sciences, Purdue University, ²Department of Statistics, Purdue University

Physiology

3:15 PM - 5:00 PM

Meeting Room K-O-L-P

3:15 p.m. 237 **Disrupted insulin signaling due to an acute immune response in swine**

Grace I. Markley¹, Chad H. Stahl¹, Elizabeth Cooper¹, Rousset Palou¹

¹University of Maryland, College Park

3:30 p.m. 238 **Effect of electronically controlled floor cooling pads on semen performance of Duroc boars during the summer heat stress**

Daphne Licuan¹, Allan P. Schinckel², Jamie Hundley³, RJ Nepomuceno⁴, Matt Robins⁴, Randolph Crasto⁴, Bradley A. Didion⁵, Michael Kleve-Feld⁶, Kara R. Stewart²

¹Purdue University Department of Animal Sciences, ²Purdue University, ³Pig Improvement Company Inc., ⁴Innovative Heating Technology, ⁵Genus plc, ⁶PIC North America

3:45 p.m. 239 **Variation in muscle protein synthesis in growing gilts is partially associated with insulin resistance and sensitivity**

Aline Remus¹, Hélène Lapierre¹, Marie-France Palin¹, Candido Pomar¹

¹Agriculture and Agri-Food Canada (AAFC)

4:00 p.m. 240 **Impact of structural traits on semen collection training and lesion characteristics in Duroc boars**

Ashley R. Hartman¹, Macie C. Weigand¹, David M. Grieger¹, Karol E. Fike¹

¹Kansas State University

4:15 p.m. 241 **Immunophysiology and performance of broilers supplemented with macroalgal sulfated polysaccharides during a subclinical necrotic enteritis challenge**

maria garcia suarez¹, Rami Dalloul², Candice Blue²

¹Olmix, ²UGA

4:30 p.m. 241 **Comparison of GnRH administration day in the 7&7 Synch versus 8&6 Synch Protocol for fixed-timed artificial insemination in beef heifers**

Clayton E. Schowe¹, Bryan R. Kutz¹, Jeremy G. Powell¹, Jana L. Reynolds¹, Kirsten A. Midkiff², Charles R. Looney¹, Wyatt E. Weber¹

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

4:45 p.m. 243 **Effects of body weight change in pre-production Duroc boars on semen collection training, semen production parameters, and longevity in a commercial boar stud**

Ashley R. Hartman¹, Macie C. Weigand¹, Steven L. Terlouw², Brad S. Garrison², David M. Grieger¹, Jason C. Woodworth¹, Kara R. Stewart³, Karol E. Fike¹

¹Kansas State University, ²DNA Genetics, ³Purdue University

Nonruminant Nutrition IX - Zinc and Copper

3:15 PM - 5:15 PM

Hall of Ideas G/J

3:15 p.m. 196 **Effects of zinc source and level in low ABC-4 diets on nursery pig growth performance and fecal dry matter**

Jamil Faccin¹, Jonathan Riedmüller², Alessandra Monteiro³, Jürgen Zentek², Joel M. DeRouchey¹, Jordan T. Gebhardt¹, Robert D. Goodband¹, Jason C. Woodworth¹, Mike D. Tokach¹

¹Kansas State University, ²Universität Berlin, ³Animine Precision Minerals

3:30 p.m. 197 **Effects of dietary zinc supplementation strategy on immune response, bacterial load and disease severity in growing gilts infected with *Mycoplasma hyopneumoniae***

Corey B. Carpenter¹, Pedro E. Urriola², Gerald C. Shurson¹, Maria Pieters¹, Lee J. Johnston¹, Wesley Schweer³, Lucas Rodrigues³

¹University of Minnesota, ²University of Minnesota, ³Zinpro Corporation

3:45 p.m. 198 **Evaluation of zinc source and concentration on growth performance of nursery swine**

Jose A. Soto¹, Henrique S. Cemin², Morgan D. Hart³, Sharlie A. Hansen², Ernie L. Hansen²

¹Alltech, ²Hubbard Feeds, ³Hubbard Feed

4:00 p.m. 199 **Phytosorb improves feed efficiency in pigs of two different commercial Duroc sire lines in late finishing compared to Tri-Basic Copper Chloride**

Woong Bi Kwon¹, Steve J. England¹, Greg Hartsook¹, Pornpim Aparachita¹, Kevin Soltwedel¹, Robert Fischer¹, Fredrik Sandberg¹

¹Furst-McNess Company

4:15 p.m. 200 **Effects of zinc oxide removal and different nutritional plans on the growth performance, health, and behavior of nursery pigs from different genetic lines**

Vitor Moita¹, Jordi Camp¹, Carine M. Vier¹, Wayne R. Cast¹, Steve Dritz¹, Luis E. Zaragoza¹, Danielle Wilson-Wells¹, Ning Lu¹, Weasley Orlando¹, Jose Landero², Malachy Young²

¹Genus PIC, ²Gowans Feed Consulting

4:30 p.m. 201 **The effects of the supplementation of a Zinc-amino acid complex in pig nursery diets with differing pharmacological levels of Zinc Oxide and complexity**

Wesley P. Schweer¹, Alyssa S. Cornelison¹, Mike Socha¹, Todd E. Williams², Lucas Rodrigues¹

¹Zinpro Corporation, ²Pipestone Research

4:45 p.m. 202 **Source matters: long-term effects of nursery sanitary condition and dietary Zinc source and level on growth performance, diarrhea incidence, and carcass metrics of pigs**

Lucas Rodrigues¹, Alyssa S. Cornelison¹, Wesley P. Schweer¹, Ton Kramer¹, Stefan Langer¹, Mike Socha¹, Rhuan F. Chaves², Vinicius Cantarelli²

¹Zinpro Corporation, ²AnimalNutri - Science and Technology

5:00 p.m. 203 **The relationship between potentiated zinc oxide and monovalent copper in a dietary administration for weanling piglets**

Luca Marchetti¹, Raffaella Rebucci¹, Paola Cremonesi², Bianca Castiglioni², Filippo Biscarini², Yron Joseph Y. Manaig³, Valentino Bontempo¹

¹Università degli Studi di Milano, ²Institute of Agricultural Biology and Biotechnology (IBBA-CNR),

³Animine Sas

Teaching and Extension Education

4:15 PM - 4:45 PM

Hall of Ideas E/H

4:15 p.m. 223 **Survey of veterinarians who use pentobarbital for euthanasia suggests knowledge gaps regarding animal disposal**

Mike Murphy¹, Emily Cornwell²

¹American Veterinary Medical Association, ²Food and Drug Administration Center for Veterinary Medicine

4:30 p.m. 224 **Influence of gender on animal science research funding from the National Institute of Food and Agriculture**

Angelica G. Van Goor¹, Emma Moran¹, Charlotte Kirk-Baer², Robbin Shoemaker¹, Mark Miranda¹, Parag Chitnis³

¹USDA-National Institute of Food and Agriculture, ²USDA-National Resources Conservation Services, ³University of Wyoming

Wednesday, March 13, 2024

Ruminant Nutrition IV

8:00 AM - 9:15 AM

Hall of Ideas F/I

8:00 a.m. 293 **Development of a model to predict forage intake and growth of bottle-fed Holstein calves**

Phillip A. Lancaster¹, Geovana C. Baldin¹, Caleb Hildebrand¹, Robert Larson¹

¹Beef Cattle Institute, Kansas State University

8:15 a.m. 294 **Development of a model to predict forage intake and growth of nursing beef calves**

Phillip A. Lancaster¹, Geovana C. Baldin¹, Caleb Hildebrand¹, Robert Larson¹

¹Beef Cattle Institute, Kansas State University

8:30 a.m. 295 **Effects of dietary antimicrobials on the ruminant gastrointestinal tract microbiome**

Tyler J. Vincent¹, Lester R. Nolasco¹, Chaichana Suriyapha², Timothy A. Johnson³, Jon P. Schoonmaker¹

¹Purdue University, ²Khon Kaen University, ³Department of Animal Sciences, Purdue University

8:45 a.m. 296 **Effects of plasma zinc concentration on longissimus thoracis metabolic status of beef steers**

Brock M. Ortner¹, Dathan T. Smerchek¹, Stephanie L. Hansen¹

¹Iowa State University

9:00 a.m. 297 **Impact of ruminal acidosis on cattle energy metabolism**

Haley F. Linder¹, Jiangong Li¹, Larry L. Berger¹, Angela R. Green-Miller², Joshua C. McCann¹

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

Swine Translational II

8:00 AM - 10:30 AM

Hall of Ideas E/H

8:00 a.m. 285 **Impact of feeding strategies on semen concentration, motility, and morphology of the mature AI boar**

Taw Scaff¹, Alicia N. Denton¹, Ally ford¹, Emma Zaicow¹, Kara R. Stewart¹, Brian T. Richert¹

¹Purdue University

8:15 a.m. 286 **Impact of feeding strategies on bodyweight and body condition in mature AI boars**

Taw Scaff¹, Lauren A. Brizgys¹, Mckenzie R. Cecil¹, Alicia N. Denton¹, Alexandra Fisk¹, Ally ford¹, Kara Pounds¹, Jacob A. Richert¹, Emma Zaicow¹, Kara R. Stewart¹, Brian T. Richert¹

¹Purdue University

8:30 a.m. 287 **The effect of cooling pads and Moringa oleifera on lactating sows under heat stress**

McKeeley C. Stansberry¹, Wonders Ogundare², Linda M. Beckett¹, Leriana Garcia Reis¹, Elizabeth G. Fisher¹, Evy M. Tobolski¹, Brian T. Richert¹, Theresa M. Casey³, Allan P. Schinckel¹, Radiah C. Minor²

¹Purdue University, ²North Carolina A&T State University, ³Department of Animal Sciences, Purdue University

8:45 a.m. 288 **Effects of increasing water concentrations of oregano essential oil supplementation for lactating sows**

Alexandra Fisk¹, Alicia Denton², Taw Scaff¹, Kara Pounds¹, Rafael A. Cabrera³, M. Dolores Cabrera³, Kara R. Stewart¹, Brian T. Richert¹

¹Purdue University, ²University of Missouri, Mizzou, ³Nutrinae, LLC

9:00 a.m. 289 **Evaluation of fecal microbiota transplantation in primiparous sows**

Dalton C. Humphrey¹, Caitlyn Wileman¹, Chloe S. Hagen¹, Margaret Putnam¹, Ayva Bohr¹, Kamryn Lesle¹, Stephan Schmitz-Esser¹, Laura L. Greiner¹

¹Iowa State University

9:15 a.m. **Swine Translational II Break**

9:30 a.m. 290 **Commercial farm evaluation of enzymatically processed soybean meal in lactating sows**

Megan R. Bible¹, Simone H. Rasmussen², Jessika van Leeuwen²

¹Hamlet Protein Inc, ²Hamlet Protein A/S

9:45 a.m. 291 **An evaluation of soybean meal inclusion rate in pigs fed from wean to market**

Eric Weaver¹, Jinsu Hong¹, Ryan S. Samuel¹, Crystal L. Levesque², Autumn Kramer¹, Robert C. Thaler¹

¹South Dakota State University, ²South Dakota State University

10:00 a.m. 292 **Effects of feeding mycotoxins-contaminated feed with a mitigation strategy on growth performance and health status in weaned pigs**

Yuan-Tai Hung¹, Gary Reznik¹, Emily Fruge¹, Trevor Lutz¹

¹Devenish Nutrition

10:15 a.m. 293 **Effects of *Saccharmyces* yeast postbiotics on pig feed performance and carcass characteristics when included in an elevated protein diet**

Xiaohan Li¹, Chad B. Paulk², John M. Gonzalez¹, Matthew Vaughn³, Daniela A. Alambarrio¹, Siara Zedonek¹

¹University of Georgia, ²Kansas state university, ³Puretein Bioscience LLC

Nonruminant Nutrition X - Grow-Finish II

8:00 AM - 10:45 AM

Hall of Ideas G/J

8:00 a.m. 246 **The effect of trypsin inhibitor unit concentrations from raw soybeans in grower pig performance and protein digestibility**

Kayla A. Miller¹, Mitchell J. Nisley¹, Omarh F. Mendoza², Joel D. Spencer³, Hari B. Krishnan⁴, Nicholas K. Gabler¹

¹Iowa State University, ²The Maschhoffs LLC, ³United Animal Health, ⁴USDA

8:15 a.m. 247 **Evaluating the use of soybean hulls on growth performance, carcass composition, and digestibility when fed to grow-finish pigs**

Kayla A. Miller¹, Omarh F. Mendoza², Chris Sparks¹, Nicholas K. Gabler¹

¹Iowa State University, ²The Maschhoffs LLC

8:30 a.m. 248 **Effects of feeding finishing pig diets differing in Ca:P ratio, added phytase and 25(OH)D₃ on growth performance, serum 25(OH)D₃, carcass characteristics, and bone characteristics**

Hilario M. Cordoba¹, Jason C. Woodworth¹, Robert D. Goodband¹, Joel M. DeRouchey¹, Mike D. Tokach¹, Jordan T. Gebhardt¹, Jon R. Bergstrom²

¹Kansas State University, ²dsm-firmenich

8:45 a.m. 249 **A nutritional solution based on calcidiol (25-OH-D₃, HyD®) and triterpenoids improves growth performance in grower-finisher pigs fed low Ca and P diets without compromising bone health**

Ursula M McCormack¹, Ramon Muns², Christina Mulvenna², Maria C Walsh¹, Laurent Roger¹, Estefania Perez Calvo¹

¹dsm-firmenich, ²AFBI

9:00 a.m. 250 **Effects of premix carriers rich in iron, calcium, or fiber on growth performance of early-growing pigs**

Liangkai Cheng¹, Xule Liu², Thirayot Srisap², Tingting Ju³, Gary Stoner², Apichat Wantanasak², Jiyao Guo², Xiao Xu¹

¹Wuhan Polytechnic University, ²CP Group, ³University of Alberta

9:15 a.m. **Nonruminant Nutrition X - Grow-Finish II Break**

9:30 a.m. 251 **Effects of feeding increasing levels of dimethylglycine (DMG) on growth performance, livability, and carcass characteristics of commercial finishing pigs**

Ran Song¹, Nick Shelton¹, Sarah E. Schuling¹, Sue M. Knudtson¹, Jodi Miller¹, Dan E. Schimek¹, Kim Friesen¹

¹NutriQuest

9:45 a.m. 252 **Evaluation of phase feeding and complete diet blending at different standardized ileal digestible lysine levels on finishing pig growth performance, carcass characteristics and diet costs**

Ron Aldwin S. Navales¹, Mike D. Tokach¹, Dwayne Krogstad², Joel M. DeRouchey¹, Jordan T. Gebhardt¹, Robert D. Goodband¹, Jason C. Woodworth¹

¹Kansas State University, ²ComDel Innovation

10:00 a.m. 253 **The influence of corn-based fiber on digesta short chain fatty acid composition and pH in growing pigs**

Hannah Miller¹, Rachel Self¹, Cassidy Sasser², Amelia Balser², Jerrad F. Legako², Sebastian Hernandez², Rand R. Broadway³, Nicole C. Burdick Sanchez³, Jeff A. Carroll³, Amy L. Petry¹

¹University of Missouri, ²Texas Tech University, ³Livestock Issues Research Unit USDA

10:15 a.m. 254 **Effect of feeding high oleic soybean oil to finishing pigs on growth performance, carcass characteristics, and meat quality**

Ashir Foreman Atoo¹, Crystal L. Levesque², Robert C. Thaler¹, Keith Underwood¹, Erin S. Beyer³, Jorge Y. Perez Palencia¹

¹South Dakota State University, ²South Dakota State University, ³North Dakota State University

Nonruminant Nutrition XII - Nursery III

8:00 AM - 10:45 AM

Ballroom D

8:00 a.m. 265 **Effect of L-Glutamine and enzyme supplementation of liquid creep feed from day 8 to 28 of age on pre-weaning growth and health of pigs**

Elisa A. Arnaud¹, Gillian E. Gardiner², John V. O'Doherty³, Torres Sweeney³, Peadar G. Lawlor¹

¹Teagasc, ²South East Technological University, ³University College Dublin

8:15 a.m. 266 **Evaluation of anchovy fish meal with or without added fish solubles on nursery pig performance**

Ethan Stas¹, Mike D. Tokach¹, Joel M. DeRouchey¹, Jason C. Woodworth¹, Robert D. Goodband¹, Jordan T. Gebhardt¹

¹Kansas State University

8:30 a.m. 267 **Effects of replacing soybean meal with a hydrothermal mechanical processed soybean meal on growth performance and health of nursery pigs fed a low complexity diet**

Sabrina May¹, Caroline Gonzalez-Vega¹, Chad M. Pilcher¹, Chris W. Parks¹

¹Cargill

8:45 a.m. 268 **Effect of soybean gums and soybean soapstocks on weanling pig growth performance**

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

¹Kansas State University

9:00 a.m. 269 **Influence of herbal active D on nursery pig growth performance, bone characteristics and blood measures**

Larissa L. Becker ¹, Mike D. Tokach ¹, Jason C. Woodworth ¹, Robert D. Goodband ¹, Joel M. DeRouchey ¹, Jordan T. Gebhardt ¹

¹Kansas State University

9:15 a.m. **Nonruminant Nutrition XII - Nursery III Break**

9:30 a.m. 270 **Interactive effects of available phosphorus and Ca:P on growth performance of nursery pigs fed diets containing phytase**

Henrique S. Cemin ¹, Morgan D. Hart ², Sharlie A. Hansen ¹, Jose A. Soto ³, Ernie L. Hansen ¹

¹Hubbard Feeds, ²Hubbard Feed, ³Alltech

9:45 a.m. 271 **The effects of supplementing diets with 25-OH-D₃ , with or without increased vitamin E, on the performance of nursery pigs**

Jon R. Bergstrom ¹, Jose Landero ², Malachy Young ², Sara Hough ¹

¹dsm-firmenich, Animal Nutrition & Health, ²Gowans Feed Consulting

10:00 a.m. 272 **Effects of increasing folic acid on nursery pig growth performance and serum homocysteine**

Larissa L. Becker ¹, Jordan T. Gebhardt ¹, Mike D. Tokach ¹, Robert D. Goodband ¹, Joel M. DeRouchey ¹, Jason C. Woodworth ¹

¹Kansas State University

10:15 a.m. 273 **Effect of dietary iodine supplementation on the growth performance and thyroid hormone concentrations of nursery pigs**

Robert Dove ¹, Savannah Locke ¹, Clint Edmunds ², Mallory Sterling ³, Jordan Sanvidge ³, Nuan Wang ³, Clay A. Lents ⁴, Michael Azain ³

¹University of Georgia, ²Clayton State University, ³UGA, ⁴USDA

10:30 a.m. 274 **Socialization of piglets during suckling enhanced feed intake after weaning but did not alter their response to dietary amino acid concentration**

Lluís Fabà ¹, Michael O. Wellington ², Hubert M. J. van Hees ³, Tetske G. Hulshof ³

¹Trouw Nutrition, ²Trouw Nutrition R&D Swine, ³Trouw Nutrition R&D

Nonruminant Nutrition XIII - Breeding Herd II

8:00 AM - 10:45 AM

Ballroom C

8:00 a.m. 275 **Assessment of changes in hemoglobin concentration (Hb) in sows and their offspring over two consecutive reproductive cycles**

Katlyn A. McClellan ¹, Merlin D. Lindemann ², Crystal L. Levesque ³

¹South Dakota State University, ²University of Kentucky, ³South Dakota State University

8:15 a.m. 276 **Effects of a phytogetic feed additive fed during lactation on sow and litter performance**

Gabriella Lima ¹, Hayford Manu ², C. P. A. van de Ligt ³, Emma H. Wall ⁴, Lee J. Johnston ²

¹Department of Animal Science, University of Minnesota, ²University of Minnesota, ³Selko USA, ⁴Nutreco

8:30 a.m. 277 **Effect of yeast probiotics in lactation and nursery diets on progeny lifetime growth performance, immune response, and carcass characteristics**

Abigail K. Jenkins ¹, Joel M. DeRouchey ¹, Jordan T. Gebhardt ¹, Jason C. Woodworth ¹, Mike D. Tokach ¹, Robert D. Goodband ¹, Joseph Loughmiller ², Brian Kremer ²

¹Kansas State University, ²Phileo by Lesaffre

8:45 a.m. 278 **Phytogetic feed additive increased sow lactation average daily feed intake, litter weaning weight, and subsequent conception rate when fed in summer environmental conditions**

Molly L. McGhee ¹, Chad M. Pilcher ¹, Brent Frederick ¹, Kory Moran ¹

¹Cargill

9:00 a.m. 279 **Effect of multiple feed additives on sow inflammatory status and reproductive performance during lactation**

Qiong Hu ¹, Junmei Zhao ¹, Thomas Pecqueur ¹, Stephanie Walston ¹

¹Cargill

9:15 a.m. **Nonruminant Nutrition XIII - Breeding Herd II Break**

9:30 a.m. 280 **Feeding a combination of feed additives prior and during sows' farrowing reduces inflammation and oxidative stress and increases blood calcium to support uterine contraction**

Laia Blavi ¹, Laia Sobrevia ¹, Steven Laird ¹, Mai Anh Ton Nu ¹, Simon Tibble ¹

¹AB Neo

9:45 a.m. 281 **Effects of dietary *Aspergillus oryzae* postbiotic during gestation and lactation on sow and progeny performance**

Sudario Roberto Silva Junior ¹, Lee J. Johnston ¹, Hayford Manu ¹, Andres Gomez ¹, Cesar Ocazio ², Ignacio R. Ipharraguerre ³, Pedro E. Urriola ⁴

¹University of Minnesota, ²BioZyme Inc, ³University of Kiel, ⁴University of Minnesota

10:00 a.m. 282 **Effect of dietary supplementation with Guanidinoacetic acid, a creatine precursor, in gestating and lactating sows on sow and litter performance**

S. M. S. Mendoza ¹, L. Bauer ², John K. Htoo ², Sarah Asmussen ³, S. Richert ²

¹Evonik Corporation, ²Evonik Operations GmbH, ³Livestock feed tests Denmark ApS

10:15 a.m. 283 **Identification of new or existing risk factors associated with the development of sow pelvic organ prolapse**

Lori Kociemba ¹, Carine M. Vier ¹, Sergio Canavate ¹, Andres diaz ¹, Julia A. Calderon Diaz ¹,

Kendall Weger ¹, Weasley Orlando ¹, Steve Dritz ¹

¹Genus PIC

10:30 a.m. 284 **Relationship between sow caliper measurements with sow reproductive performance and longevity in the herd**

Carine M. Vier¹, Steve Dritz¹, Weasley Orlando¹, Julia A. Calderon Diaz¹, Jordi Camp¹, Wayne R. Cast¹, Ning Lu¹, Sergio Canavate¹, Dan Hamilton¹, Mark Knauer², Jean Poulin¹

¹Genus PIC, ²North Carolina State University

Nonruminant Nutrition XI - Calcium and Phosphorus

8:00 AM - 11:15 AM

Ballroom A

8:00 a.m. 255 **Anchor Talk: Consider intrinsic factors that regulate homeostasis to optimize sustainability of mineral supplements for swine**

Thomas D. Crenshaw¹, Mariola Grez-Capdeville², Laura A. Amundson², Brittney P. Kokinos²

¹UW Madison, ²University of Wisconsin-Madison

8:30 a.m. 256 **Anchor Talk: Accounting for effects of microbial phytase on digestibility of calcium and phosphorus**

Hans H. Stein¹

¹University of Illinois at Urbana-Champaign

9:00 a.m. 257 **Estimating bone mineral replenishment following phosphorus deficiency in growing pigs**

Grace C. McKibben¹, Gustavo Cordero², Gilson A. Gomes², Spenser Becker², Pete Wilcock², Nicholas K. Gabler¹

¹Iowa State University, ²AB Vista

9:15 a.m. 258 **Nutritional strategies allowing inorganic phosphates reduction in maintaining maximum growth performance and bone mineralisation in piglets**

Xavière ROUSSEAU¹, Tristan Bréhélin², Cécile Rougier-Borne², Gustavo Cordero¹

¹AB Vista, ²Techna

9:30 a.m. **Nonruminant Nutrition XI - Calcium and Phosphorus Break**

9:45 a.m. 259 **Effect of very low calcium diet supplemented with microbial phytase in post-weaning piglets**

Marie-Pierre Létourneau Montminy¹, Marllon De Oliveira²

¹Université Laval, ²UNESP

10:00 a.m. 260 **Effect of different doses of phytase (HiPhoriusTM) and two primary calcium sources on nutrient digestibility, retention and blood parameters in weaned piglets**

Xiaonan Guan¹, Vanessa Lagos¹, Adam Smith², Carrie Walk², Heng-Xiao Zhai³, Francesc Molist¹

¹Schothorst Feed Research, ²DSM Nutritional Products Ltd, ³DSM-Firmenich (China) Animal Nutrition Research Center

10:15 a.m. 261 **Relationship between dietary calcium and available phosphorus in growing pigs**

Grace C. McKibben ¹, Chris Sparks ¹, Kayla A. Miller ¹, Elizabeth M. Due ¹, Mitchell J. Nisley ¹, Nicholas K. Gabler ¹

¹Iowa State University

10:30 a.m. 262 **Modulation of vitamin D, calcium and phosphorous metabolism and immune response in pre- and post-weaning piglets under different vitamin D supplementation strategies**

Danyel Bueno Dalto ¹, Geneviève Villeneuve ¹, Frédéric Guay ², J. Jacques Matte ¹, Jerome Lapointe ¹

¹Agriculture and Agri-Food Canada, ²Laval University

10:45 a.m. 263 **Effects of source of calcium carbonate and microbial phytase on standardized total tract digestibility of calcium by growing pigs**

Megan E. Nelson ¹, Su A Lee ¹, Carrie Walk ², Hans H. Stein ¹

¹University of Illinois at Urbana-Champaign, ²DSM Nutritional Products Ltd

11:00 a.m. 264 **Effects of increasing available phosphorus for 6 to 16 kg pigs fed diets containing phytase**

Henrique S. Cemin ¹, Morgan D. Hart ², Sharlie A. Hansen ¹, Jose A. Soto ³, Ernie L. Hansen ¹

¹Hubbard Feeds, ²Hubbard Feed, ³Alltech

Meat Science Symposium

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8:00 AM - 12:00 PM

Ballroom B