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
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
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
1Texas Tech University

11:05 a.m.  9 Use of new technology to measure methane emissions
Logan Thompson
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, 3Agroceres 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 Sauvé 1, Laetitia Cloutier 2, Lucie Galiot 2, Frédéric Guay 1, Gabrielle Dumas 2, Charlotte Gaillard 3, Jean-Yves Dourmad 3, Aude Simongiovanni 4, Patrick Gagnon 2
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. Vier 1, Weasley Orlando 1, Julia A. Calderon Diaz 1, Jorge Estrada 2, Jordi Camp 1, Wayne R. Cast 1, Steve Dritz 1, Luis E. Zaragoza 1, Ning Lu 1, Beau Peterson 3, Dustin Boler 4, Eric Parr 4
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 Shipman 1, Jorge Y. Perez Palencia 1, Jinsu Hong 1, Kevin J. Herrick 2, Melissa L. Jolly-Breithaupt 2, Crystal L. Levesque 3
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. Vier 1, Alexandra Möller Alves 2, Ines Andretta 2, Gabriel Martins 2, Jéssica Pereira 2, Weasley Orlando 1, Amanda P. Siqueira 3, Vitor Moita 1
1Genus PIC, 2UFRGS, 3Agroceres PIC

10:00 a.m. 17 **Effect of branched-chain amino acids on lactating sow and piglet performance**
Dalton C. Humphrey 1, Keith D. Haydon 2, Laura L. Greiner 1
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 Spinler 1, Jordan T. Gebhardt 1, Joel M. DeRouchey 1, Mike D. Tokach 1, Robert D. Goodband 1, Hyatt Frobose 2, Amanda Uitermarkt 2, Vitor Moita 3, Jason C. Woodworth 1
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 Spinler 1, Jordan T. Gebhardt 1, Joel M. DeRouchey 1, Mike D. Tokach 1, Robert D. Goodband 1, Hyatt Frobose 2, Amanda Uitermarkt 2, Jason C. Woodworth 1
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. Didion 1, Jamie Hundley 2, Michael Kleve-Feld 3, Tom Gall 4, Carine M. Vier 5, Amanda Middleton 5, Weasley Orlando 5, Ning Lu 5, Malcom Ballard 6, Wayne R. Cast 5, Mike Parsley 7, Steve Dritz 5, Kent Burgess 6
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 Byrd 1, Kara R. Stewart 1, Jonathan A. Pasternak 2, Jay S. Johnson 3
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. Bohrer 1, Yifei Wang 1, Blaine Hansen 2, Steve Pollmann 3, Jose Landero 4, Malachy Young 4
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. Royall 1, Mike D. Tokach 1, Jason C. Woodworth 1, Joel M. DeRouchey 1, Robert D. Goodband 1, Jordan T. Gebhardt 1, Carine M. Vier 2, Matthew Spindler 2, Weasley A. Orlando 2, Luis E. Zaragoza 2, Ning Lu 2, Wayne R. Cast 2, Danielle Wilson-Wells 2, Steve Dritz 2, Jordi Camp 2, Julia Holen 3, Alyssa Betlach 3
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. Cordoba 1, Mike D. Tokach 1, Robert D. Goodband 1, Jason C. Woodworth 1, Joel M. DeRouchey 1, Jordan T. Gebhardt 1
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 Kim 1, Jamil Faccin 1, Robert D. Goodband 1, Mike D. Tokach 1, Joel M. DeRouchey 1, Jason C. Woodworth 1, Jordan T. Gebhardt 1
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 lima 1, Gabriel Castro 1, Amanda Siqueira 1, Carine M. Vier 2, Weasley Orlando 2, Vitor Molta 2, Caio A. silva 3
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 Lu 1, Nanfang Zeng 2, Ning Su 2, Ling Chen 2, Jie Chen 2, Carine M. Vier 1, Wayne R. Cast 1, Steve Dritz 1, Danielle Wilson-Wells 1, Luis E. Zaragoza 1, Jordi Camp 1, Weasley Orlando 1
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 Camp 1, Weasley Orlando 1, Ning Lu 1, Carine M. Vier 1, Wayne R. Cast 1, Steve Dritz 1, Luis E. Zaragoza 1, Danielle Wilson-Wells 1, Jose Landero 2, Malachy Young 2
1Genus PIC, 2Swine Vet Center

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 Camp 1, Carine M. Vier 1, Matthew Spindler 1, Julia Holen 2, Weasley Orlando 1, Alyssa Betlach 2, Wayne R. Cast 1, Steve Dritz 1, Danielle Wilson-Wells 1, Ning Lu 1, Luis E. Zaragoza 1
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 Lu 1, Luis Zaragoza 1, Carine M. Vier 1, Julia A. Calderon Diaz 1, Weasley Orlando 1, Ellie Hewett 2, Simon Turner 2, Jorge Estrada 3, Jordi Camp 1, Wayne R. Cast 1, Steve Dritz 1
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. DeRouchey 1, Jason W. Ross 2, Christopher Rademacher 2, Mike D. Tokach 1, Jason C. Woodworth 1, Stacie Matchan 2, Daniel C. Linhares 2, Anna K. Johnson 2, Lee Schulz 2, Kara R. Stewart 3, Jack C. Dekkers 4, Laura L. Greiner 2, Nicholas K. Gabler 2, Jordan T. Gebhardt 1
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

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**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. Grohmann 1, Jared E. Decker 1, Caleb M. Shull 2, Erin J. Lowe 3, Jon Hoek 3, Kevin Schnarrre 4, Dale D. Polson 4
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 Harrison 1, Haley Otott 1, Jianfa Bai 1, Vaughn Hamill 1, Aaron Singrey 2, Phillip C. Gauger 3, Marcelo Almeida 3, Jason C. Woodworth 1, Cassandra K. Jones 1, Charles R. Stark 1, Roman Pogranichniy 1, Jordan T. Gebhardt 1, Chad B. Paulk 4
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. Midkiff 1, Beth B. Kegley 2, Shane Gadberry 1, Robin A. Cheek 3, Jana L. Reynolds 2, Tom Hess 1, Jeff Sarchet 4, Mitch Blanding 4, Tom Short 4, Jeremy G. Powell 2
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 Negrini 1, Diana Luise 1, Federico Correa 1, Sara Virdis 1, Agathe Roméo 2, Alessandra Monteiro 2, Paolo Trevisi 1
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. Navales 1, Katelyn Gaffield 1, Ty Kim 1, Joel M. DeRouchey 1, Paul Martin 2, Juan Javierre 3, Jordan T. Gebhardt 1, Robert D. Goodband 1, Mike D. Tokach 1, Jason C. Woodworth 1
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. Niblett 1, Kimberly A. Williams 1, Marguerite B. Cross 1, Alexis L. Clapp 1, Mark J. Estienne 1
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. Oladele 1, Brian T. Richert 1, Timothy A. Johnson 2
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 Virdis 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. Macholan 1, Grace Jardon 1, Elissa Colombo 2, Zachary K. Smith 1, Warren C. Rusche 1, Ana Clara Baiao Menezes 1  
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. Caple 1, Abigail R. Rathert-Williams 1, Colby A. Redifer 1, Thomas B. McFadden 1, Allison M. Meyer 1  
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 Frake 1, Nicole Tate 1, Annette McCoy 2, Molly McCue 1  
1University of Minnesota, 2University of Illinois

2:00 p.m.  83  **Effect of stocking density on F1 Gilt reproductive performance**  
Clara K. Henry 1, Rachel Self 2, Brady McNeil 3, Amanda Cross 3, Ethan Stephenson 4, Christine Mainquist-Whigham 4  
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. McCann 1, Emma G. Prybylski 2, Haley F. Linder 1  
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 Lloyd 1, Bre Pace 1, Erick Fuentes Cardona 1, Hannah Miller 1, Rachel Self 1, Isabella Murphy 1, Leah M. Kellesvig 2, Michaela Metz 2, Amy L. Petry 1  
1University of Missouri, 2Vita Plus

2:45 p.m.  86  **Assessment of sow hemoglobin concentration and its impact on farrowing duration**  
Sydney L. Sheffield 1, Katslyn A. McClellan 1, Crystal L. Levesque 1  
1South Dakota State University

3:00 p.m.  87  **Evaluating the effects of an amino acid-formulated diet on ruminal fermentation in vitro**  
McKenna Merritt 1, Haley F. Linder 2, Michael J. Cecava 3, Joshua C. McCann 2  
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. Moening 1, Grace Jardon 1, Elissa Colombo 2, Zachary K. Smith 1, Warren C. Rusche 1, Ana Clara Baião Menezes 1
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 Olalde 1, Kylie P. Ewing 1, Joshua C. McCann 2, Daniel W. W. Shike 2
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 Bohr 1, Chloe S. Hagen 1, Keith D. Haydon 2, Laura L. Greiner 1
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 Pace 1, Alexis Lloyd 1, Isabella Murphy 1, Hannah Miller 1, Amy L. Petry 1
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. Rincker 1, Joshua C. McCann 1, Daniel W. W. Shike 1, William T. Meteer 1
1University of Illinois Urbana-Champaign

4:45 p.m.  93  **Evaluating the efficacy of anthelmintics in an upper Midwest horse herd**
Sarah Schmidt 1, Avery Dobrzelecki 1, Alex Pfaffenbach 1, Savea Zimmerman-Cameron 1, Morgan Pyles 1
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 Schoelerman 1, Warren C. Rusche 1, Zachary K. Smith 1, Forest L. Francis 1
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 Swanson 1, Andy Boschert 1, Mikayla Spinler 1, Jason C. Woodworth 1, Mike D. Tokach 1, Robert D. Goodband 1, Joel M. DeRouchey 1, Jordan T. Gebhardt 1
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. Cecil¹, Samantha M Neeno¹, MaryKate Byrd¹, Tyler C C. field¹, Jeremy N Marchant¹, Allan P. Schinckel¹, Brian T. Richert¹, Ji-Qin Ni¹, Robert M M. Stwalley III¹, Jay S. Johnson²
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. Chrapun¹, Jinyoung Lee¹, S. M. S. Mendoza², John K. Htoo³, Martin Nyachoti¹
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. Forbes¹, Tom W. Murphy², Joan M. Burke³, Ronald M. Lewis¹
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. Grogan¹, Rebecca Allen¹, Robert Story¹, Bernard Sam¹, Jamie Andrés Ángel Isaza², Blanca Cecilia Martinez², Álvaro José Uribe², Charles V. V. Maxwell¹, Tsungcheng Cheng Tsai¹
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. Henderson¹, Jodi McGill¹, Stephanie L. Hansen¹
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. Mallea¹, Su A Lee¹, Minoy A. Cristobal², Leidy J. Torres-Mendoza², Hans H. Stein¹
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 Ogundare¹, Leriana Garcia Reis², Amber Jannasch², Linda M. Beckett², Allan P. Schinckel², Theresa M. Casey³, Radiah C. Minor¹
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 Baião 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 Leeson 1, Erin R. DeHaan 1, Justin Delver 1, Forest L. Francis 1, Becca Grimes Francis 1, Thiago Ribeiro 1, Zachary K. Smith 1, Warren C. Rusche 1
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. Prybylski 1, Alyssa Brown 1, Lauren Neuleib 2, Joshua C. McCann 3, Nicholas Heller 2, Jennifer E. Earing 2
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 jaramillo 1, Macie E. reeb 1, Jon R. Bergstrom 2, Jordan T. Gebhardt 1, Robert D. Goodband 1, Mike D. Tokach 1, Joel M. DeRouchey 1, Jason C. Woodworth 1
1Kansas State University, 2dsf-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. Baker 1, Adebayo O. Sokale 2, Brent Frederick 3, Sung Woo Kim 1
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 Choi 1, Yesid Garavito Duarte 1, Guilherme Pasquali 2, Sung Woo Kim 1
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 Jlali 1, Sarper Ozbek 1, Estelle Devillard 1
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 Vinyeta 1, Vanessa Lagos 2, Francesc Molist 2, Deepak E. E Velayudhan 1, Yueming Dersjant-Li 1
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 Cecccantini 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 Bioplatforms, 3USDA, 4South Dakota State University

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
16

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 Song 1, Beob Gyun Kim 1
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. Crome 1, Nicholas K. Gabler 1
1Iowa State University

9:00 a.m.  157  Effects of increasing dietary protein concentration on digestibility of amino acids by growing pigs
Su A Lee 1, Hans H. Stein 1
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 Halbur 1, Jinsu Hong 1, Sara Llamas-Moya 2, Tri Duong 2, Mark J. Bertram 3, Amy L. Petry 4, Eric Weaver 1
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 Kim 1, Su A Lee 2, Hans H. Stein 2
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. Sung 1, Darryl Ragland 2, Markus K. Wiltsafsky-Martin 3, Olayiwola Adeola 1
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 Saccharomyces yeast postbiotics on nursery pig Muscle fiber cross-sectional area and oxidative capacity
Daniela A. Alambario 1, Mathew A. Vaughn 2, Sung Woo Kim 3, John M. Gonzalez 1
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 Payling 1, Luis F Romero 1, Ursula M McCormack 2, Maria C Walsh 2, Laurent Roger 2, Estefania Perez Calvo 2
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. Taylor ¹, Thomas A. Crome ¹, Grace C. McKibben ¹, Jason W. Ross ¹, Steven M. Lonergan ¹, Juan P. Steibel ², Nicholas K. Gabler ¹  
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 Kavanagh ¹, Gabriella Lima ², Adrienne Hilbrands ¹, Ryan Cox ¹, Lee J. Johnston ¹, Yuzhi Li ¹  
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. Burris ¹, Anna Dilger ²  
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 Farmer ¹, Jakob C. Johannsen ², Caroline Gillies ³, Lee-Anne Huber ³, Russell C. Hovey ⁴  
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 Anas ¹, Alison K. Ward ², Kacie L. L. McCarthy ³, Pawel P. P. Borowicz ¹, Lawrence P. P. Reynolds ¹, Joel S. Caton ⁴, Carl R. Dahlen ⁴, Wellison J. J. S. Diniz ⁵  
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 Schnurbusch ¹, Zachary D. Callahan ¹, Amy L. Petry ¹, Bryon R. Wiegand ¹  
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. McDonald ¹, Brandon Fields ², Bailey Harsh ¹, Anna Dilger ¹  
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 Castellanos 1, Robert Maddock 2, Robert C. Thaler 3, Jennifer M. Young 1, Shane Mueller 4, Kim Koch 4, Eric P. Berg 1
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 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

8:15 a.m. 136 **Effects of acid-binding capacity in low-zinc diets on growth performance of weaned pigs**
Jose Landero 1, L.F. Wang 2, Lingjun Zhu 2, Jon R. Bergstrom 3, Malachy Young 1, Ruurd T. Zijlstra 2
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. Nisley 1, Joel D. Spencer 2, Omarh F. Mendoza 3, Hari B. Krishnan 4, Kayla A. Miller 1, Nicholas K. Gabler 1
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**
Katllyn A. McClellan 1, Jorge Y. Perez-Palencia 1, Eric Weaver 1, Crystal L. Levesque 2, Jinsu Hong 1
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 Pounds 1, Brian T. Richert 1, Taw Scaff 1, Alexandra Fisk 1, Mekenzie R. Cecil 1, Emily Otto-Tice 2, Allan P. Schinckel 1
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. Humphrey 1, Margaret Putnam 1, Chloe S. Hagen 1, Caitlyn Wileman 1, Keith D. Haydon 2, Laura L. Greiner 1
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
20

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

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**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

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**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 Payling 1, Luis F Romero 1
1Biofractal

10:30 a.m.  148  Evaluating water characteristics and their effects on reducing water pH using citric acid
Maxwell L. Corso 1, Jason C. Woodworth 2, Mike D. Tokach 2, Jordan T. Gebhardt 2, Joel M. DeRouchey 2, Robert D. Goodband 2
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. Schuling 1, Megan N. Engeseth 1, Sue M. Knudtson 1, Ran Song 1, Dan E. Schimek 1
1NutriQuest

11:00 a.m.  150  Development of a leaky gut model: Meta-analysis of plasma and fecal markers of leaky gut
Sarah E. Schuling 1, Megan N. Engeseth 1, Sue M. Knudtson 1, Ran Song 1, Dan E. Schimek 1
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 Gallissot 1, Jeremy Perez 2, Eric Parr 2, Michael Welch 2, Paul Olsen 3, Maria Rodriguez 1
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 Gallissot 1, Sofie Rutjens 2, Maria Rodriguez 1, Mathias Devreese 2
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
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. Petry 1, Hannah E. Miller 2
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. Gabler 1
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-Zannatta 1, L.F. Wang 1, Eduardo Beltranena 1, Aaron D. Beattie 2, Rex N. Newkirk 2, Ruurd T. Zijlstra 1
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 Miller 1, Rachel Self 1, Cassidy Sasser 2, Amelia Balser 2, Rand R. Broadway 3, Nicole C. Burdick Sanchez 3, Jeff A. Carroll 3, Michael Cruz Penn 4, Amy L. Petry 1
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. Rosero 1
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. Merriman 1
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 Shipman 1, Jorge Y. Perez Palencia 1, Jinsu Hong 1, Kevin J. Herrick 2, Melissa L. Jolly-Breithaupt 2, Crystal L. Levesque 3
1South Dakota State University, 2POET Bioproducts, 3South Dakota State University
Assessing the impact of fiber and antioxidant supplementation during the periparturient period on gilt constipation, piglet viability, and body condition score
Erick Fuentes Cardona, Hannah Miller, Rachel Self, Ben Haberl, Cesar A.A. Moura, Spenser Becker, Pete Wilcock, Amy L. Petry
1University of Missouri, 2Iowa Select, 3AB Vista

Nonruminant Nutrition Symposium II Q&A

Ruminant Nutrition III
1:45 PM - 3:00 PM
Meeting Room K-O-L-P

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, Warren C. Rusche, Zachary K. Smith
1South Dakota State University

Inclusion of a multispecies fungal feed additive in forage-based diets fed to beef cattle: effects on growth performance and ruminal fermentation
Alejandro Pittaluga, Alejandro E. Relling
1The Ohio State University

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, Zachary K. Smith, Emma H. Wall, Forest L. Francis, Becca Grimes Francis, Cassidy Ross, Warren C. Rusche, Jeff Heldt
1South Dakota State University, 2Nutreco, 3Selko

Evaluation of an exogenous fibrolytic enzyme combination in forage-based growing diets fed to growing beef cattle
Madeliene S. Nichols, Grady J. Gullickson, Yssi L. Entzie, Sarah R. Underdahl, Lydia E. Hansen, Jessica Syring, Joshua Wianecki, Danielle Jensen, Kathryn Hauxwell, Zachary E. Carlson, Thomas Winders
1North Dakota State University, 2Danisco Animal Nutrition and Health

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, Madeliene S. Nichols, Yssi L. Entzie, Lydia E. Hansen, Jessica Syring, Terry Skunberg, Justin Gilbertson, Colin T. Tobin, Kendall C. C. Swanson, Zachary E. Carlson
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 Peckler 1, Sarah J.J. Adcock 1
1University of Wisconsin Madison

2:00 p.m. 205 Detection of anemic sheep using ocular conjunctiva images and deep learning technology
Luara Freitas 1, Rafael Ferreira 1, Anderson A. Alves 1, João R. R. Dorea 1, Claudia Paz 2, Guilherme J. M. Rosa 1
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 ViH constructs in weaned piglets challenged with enterotoxigenic Escherichia coli F4+
Laia Ferreres Serafini 1, Susana Martín Orúe 1, Sandra W. Thrane 2, Lorena Castillejos Velázquez 1
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 Shi 1, Samar Tolba 1, Vanessa Leone 1, Sarah J.J. Adcock 2
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. Bloxham 1, Tim Goossens 2, Olga Lemâle 3, Retno Rahayu 4, Isaura Christiaens 4
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 Archer 1, Adrienne Hilbrands 1, Benny E. Mote 2, Ty B. Schmidt 2, Lee J. Johnston 1, Yuzhi Li 1
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-Stroud 1, Ryan N. Dilger 1, Angela R. Green-Miller 1
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 Fowler 1, Ryan S. Samuel 1, Benoit St-Pierre 1
1South Dakota State University
4:00 p.m. 212  Growth and behavior of Yorkshire gilts exhibiting physiological resilience to weaning stress
Andrea M. Luttman 1, Catherine W. Ernst 1, Janice M. Siegford 1
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. Anderson 1, Ashlynn A. Kirk 2, Jennifer Berger 3, Arquimides A. Reyes 4, Ruth Woiwode 5, Perle E. Zhitnitskiy 6, Kurt D. Vogel 4
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 Sandberg 1, Steve J. England 1, Kevin Soltwedel 1, Pornpim Aparachita 1, Robert Fischer 1, Greg Hartsook 1, Woong Bi Kwon 1
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 Welch 1, Danielle Johnson 1, Eric Parr 1, Dustin Boler 1, Steve Pollmann 2, John Stockham 3, Sean Yang 3
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. Ellis 1
1University of Guelph

2:50 p.m. 245  Modeling Growth: Considering Over-Time and Individual Variation
Izabelle A.M.A. Teixeira 1
1University of Idaho

3:30 p.m.  National Animal Nutrition Program (NANP) Symposium Roundtable Discussion
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, Hubêt M. J. van Hees²  
¹Trouw Nutriton, 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. Siegfried¹, 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
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. Weber 1, Julie Salyer 2, Sean Yang 3, John Stockham 3, Steve Pollmann 4  
1Kent Nutrition Group, 2 Kalmbach 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 Rao 1, Mike D. Tokach 2, Jason C. Woodworth 2, Joel M. DeRouchey 2, Robert D. Goodband 2, Apoorva Shah 3, Brandon Foley 3, Karsten Kjeldsen 4, Grete Brunsgaard 4, Jordan T. Gebhardt 2  
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 Cho 1, Robie Vasquez 1, Ji Hoon Song 1, Dae-Kung Kang 1, In Ho Kim 1  
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 Chen 1, Mark Whitney 1, Ross Wolfenden 1  
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 May 1, Caroline Gonzalez Vega 1, Brooke Smith 1, Kory Moran 1, Ellyn Teddy 1  
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. Bloxham 1, Tim Goossens 2, Joaquin Morales 3, Olga Lemâle 4  
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 May 1, Allison Knoll 1, Caroline Gonzalez Vega 1, Maria I. Sardi 1, Ehsan Khaipour 1  
1Cargill

4:00 p.m.  193  **The effects of mannan oligosaccharides on mortality and full value nursery swine**  
Jose A. Soto 1, Henrique S. Cemin 2, Morgan D. Hart 3, Shariie A. Hansen 2, Ernie L. Hansen 2  
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 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 Deng ¹, Marcos Elias Elias Duarte ¹, Sung Woo Kim ¹
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. Due ¹, Eric R. Burrough ¹, Emma Helm ², Nicholas K. Gabler ¹
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 Duarte ¹, Marcos Elias Elias Duarte ¹, Sung Woo Kim ¹
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 Dalto ¹, Frédéric Guay ², Guay A. Gagnon ³, Laetitia Cloutier ⁴, Marie-Pierre Létourneau-Montminy ²
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 Fu ¹, Theresa M. Casey ¹, Timothy A. Johnson ¹, Jun Xie ², Olayiwola Adeola ¹, Kolapo M. Ajuwon ¹
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. Markley ¹, Chad H. Stahl ¹, Elizabeth Cooper ¹, Rousset Palou ¹
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 Licuan ¹, Allan P. Schinckel ², Jamie Hundley ³, RJ Nepomuceno ⁴, Matt Robins ⁴, Randolph Crasto ⁴, Bradley A. Didion ⁵, Michael Kleve-Feld ⁶, Kara R. Stewart ²
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 Remus ¹, Hélène Lapierre ¹, Marie-France Palin ¹, Candido Pomar ¹
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. Hartman 1, Macie C. Weigand 1, David M. Grieger 1, Karol E. Fike 1
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 Suarez 1, Rami Dalloul 2, Candice Blue 2
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. Schowe 1, Bryan R. Kutz 1, Jeremy G. Powell 1, Jana L. Reynolds 1, Kirsten A. Midkiff 2, Charles R. Looney 1, Wyatt E. Weber 1
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. Hartman 1, Macie C. Weigand 1, Steven L. Terlouw 2, Brad S. Garrison 2, David M. Grieger 1, Jason C. Woodworth 1, Kara R. Stewart 3, Karol E. Fike 1
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 Faccin 1, Jonathan Riedmüller 2, Alessandra Monteiro 3, Jürgen Zentek 2, Joel M. DeRouchey 1, Jordan T. Gebhardt 1, Robert D. Goodband 1, Jason C. Woodworth 1, Mike D. Tokach 1
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. Carpenter 1, Pedro E. Urriola 2, Gerald C. Shurson 1, Maria Pieters 1, Lee J. Johnston 1, Wesley Schweer 3, Lucas Rodrigues 3
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. Soto 1, Henrique S. Cemin 2, Morgan D. Hart 3, Sharlie A. Hansen 2, Ernie L. Hansen 2
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, Rhuán 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. Lancaster ¹, Geovana C. Baldin ², Caleb Hildebrand ², Robert Larson ³
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. Lancaster ¹, Geovana C. Baldin ², Caleb Hildebrand ², Robert Larson ³
¹Beef Cattle Institute, Kansas State University

8:30 a.m.  295  Effects of dietary antimicrobials on the ruminant gastrointestinal tract microbiome
Tyler J. Vincent ¹, Lester R. Nolasco ¹, Chaichana Suriyapha ², Timothy A. Johnson ³, Jon P. Schoonmaker ¹
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. Ortner ¹, Dathan T. Smerchek ¹, Stephanie L. Hansen ¹
¹Iowa State University

9:00 a.m.  297  Impact of ruminal acidosis on cattle energy metabolism
Haley F. Linder ¹, Jiangong Li ¹, Larry L. Berger ¹, Angela R. Green-Miller ², Joshua C. McCann ¹
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 Scaff ¹, Alicia N. Denton ¹, Ally ford ¹, Emma Zaicow ¹, Kara R. Stewart ¹, Brian T. Richert ¹
¹Purdue University

8:15 a.m.  286  Impact of feeding strategies on bodyweight and body condition in mature AI boars
Taw Scaff ¹, Lauren A. Brizgys ¹, Mekenzie R. Cecil ¹, Alicia N. Denton ¹, Alexandra Fisk ¹, Ally ford ¹, Kara Pounds ¹, Jacob A. Richert ¹, Emma Zaicow ¹, Kara R. Stewart ¹, Brian T. Richert ¹
¹Purdue University
8:30 a.m. 287  The effect of cooling pads and Moringa oleifera on lactating sows under heat stress
McKeeley C. Stansberry 1, Wonders Ogundare 2, Linda M. Beckett 1, Leriana Garcia Reis 1, Elizabeth G. Fisher 1, Evy M. Tobolski 1, Brian T. Richert 1, Theresa M. Casey 3, Allan P. Schinckel 1, Radiah C. Minor 2
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 Fisk 1, Alicia Denton 2, Taw Scaff 1, Kara Pounds 1, Rafael A. Cabrera 3, M. Dolores Cabrera 3, Kara R. Stewart 1, Brian T. Richert 1
1Purdue University, 2University of Missouri, Mizzou, 3Nutrinae, LLC

9:00 a.m. 289  Evaluation of fecal microbiota transplantation in primiparous sows
Dalton C. Humphrey 1, Caitlyn Wileman 1, Chloe S. Hagen 1, Margaret Putnam 1, Ayva Bohr 1, Kamryn Lesle 1, Stephan Schmitz-Esser 1, Laura L. Greiner 1
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. Bible 1, Simone H. Rasmussen 2, Jessika van Leeuwen 2
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 Weaver 1, Jinsu Hong 1, Ryan S. Samuel 1, Crystal L. Levesque 2, Autumn Kramer 1, Robert C. Thaler 1
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 Hung 1, Gary Reznik 1, Emily Fruge 1, Trevor Lutz 1
1Devenish Nutrition

10:15 a.m. 293  Effects of Saccharomyces yeast postbiotics on pig feed performance and carcass characteristics when included in an elevated protein diet
Xiaohan Li 1, Chad B. Paulk 2, John M. Gonzalez 1, Matthew Vaughn 3, Daniela A. Alambario 1, Siara Zedonek 1
1University of Georgia, 2Kansas state university, 3Puretein Bioscience LLC
The effect of trypsin inhibitor unit concentrations from raw soybeans in grower pig performance and protein digestibility
Kayla A. Miller 1, Mitchell J. Nisley 1, Omarh F. Mendoza 2, Joel D. Spencer 3, Hari B. Krishnan 4, Nicholas K. Gabler 1
1Iowa State University, 2The Maschhoffs LLC, 3United Animal Health, 4USDA

Evaluating the use of soybean hulls on growth performance, carcass composition, and digestibility when fed to grow-finish pigs
Kayla A. Miller 1, Omarh F. Mendoza 2, Chris Sparks 1, Nicholas K. Gabler 1
1Iowa State University, 2The Maschhoffs LLC

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. Cordoba 1, Jason C. Woodworth 1, Robert D. Goodband 1, Joel M. DeRouchey 1, Mike D. Tokach 1, Jordan T. Gebhardt 1, Jon R. Bergstrom 2
1Kansas State University, 2dsf-firmenich

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 McCormack 1, Ramon Muns 2, Christina Mulvenna 2, Maria C Walsh 1, Laurent Roger 1, Estefania Perez Calvo 1
1dsf-firmenich, 2AFBI

Effects of premix carriers rich in iron, calcium, or fiber on growth performance of early-growing pigs
Liangkai Cheng 1, Xule Liu 2, Thirayot Srisap 2, Tingting Ju 3, Gary Stoner 2, Apichat Wantanasak 2, Jiyao Guo 2, Xiao Xu 1
1Wuhan Polytechnic University, 2CP Group, 3University of Alberta

Effects of feeding increasing levels of dimethylglycine (DMG) on growth performance, livability, and carcass characteristics of commercial finishing pigs
Ran Song 1, Nick Shelton 1, Sarah E. Schuling 1, Sue M. Knudtson 1, Jodi Miller 1, Dan E. Schimek 1, Kim Friesen 1
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. Navales 1, Mike D. Tokach 1, Dwayne Krogstad 2, Joel M. DeRouchey 1, Jordan T. Gebhardt 1, Robert D. Goodband 1, Jason C. Woodworth 1
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 Miller 1, Rachel Self 1, Cassidy Sasser 2, Amelia Balser 2, Jerrad F. Legako 2, Sebastian Hernandez 2, Rand R. Broadway 3, Nicole C. Burdick Sanchez 3, Jeff A. Carroll 3, Amy L. Petry 1
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 Atoo 1, Crystal L. Levesque 2, Robert C. Thaler 1, Keith Underwood 1, Erin S. Beyer 3, Jorge Y. Perez Palencia 1
1South Dakota State University, 2South Dakota State Univeristy, 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. Arnaud 1, Gillian E. Gardiner 2, John V. O’Doherty 3, Torres Sweeney 3, Peadar G. Lawlor 1
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 Stas 1, Mike D. Tokach 1, Joel M. DeRouchey 1, Jason C. Woodworth 1, Robert D. Goodband 1, Jordan T. Gebhardt 1
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 May 1, Caroline Gonzalez-Vega 1, Chad M. Pilcher 1, Chris W. Parks 1
1Cargill

8:45 a.m. 268 Effect of soybean gums and soybean soapstocks on weanling pig growth performance
Katelyn Gaffield 1, Robert D. Goodband 1, Jason C. Woodworth 1, Joel M. DeRouchey 1, Mike D. Tokach 1, Jordan T. Gebhardt 1
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
1dsf-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, Hubèrt M. J. van Hees 3, Tetske G. Hulshof 3
1Trouw Nutriton, 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 phytogenic 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 **Phytogenic 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. Ipharraguere 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. Vier 1, Steve Dritz 1, Weasley Orlando 1, Julia A. Calderon Diaz 1, Jordi Camp 1, Wayne R. Cast 1, Ning Lu 1, Sergio Canavate 1, Dan Hamilton 1, Mark Knauer 2, Jean Poulin 1
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. Crenshaw 1, Mariola Grez-Capdeville 2, Laura A. Amundson 2, Brittney P. Kokinos 2
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. Stein 1
1University of Illinois at Urbana-Champaign

9:00 a.m.  257  Estimating bone mineral replenishment following phosphorus deficiency in growing pigs
Grace C. McKibben 1, Gustavo Cordero 2, Gilson A. Gomes 2, Spenser Becker 2, Pete Wilcock 2, Nicholas K. Gabler 1
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 ROUSSEAU 1, Tristan Bréhélin 2, Cécile Rougier-Borne 2, Gustavo Cordero 1
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 Montminy 1, Marlin De Oliveira 2
1Université Laval, 2UNESP

10:00 a.m.  260  Effect of different doses of phytase (HiPhorius™) and two primary calcium sources on nutrient digestibility, retention and blood parameters in weaned piglets
Xiaonan Guan 1, Vanessa Lagos 1, Adam Smith 2, Carrie Walk 2, Heng-Xiao Zhai 3, Francesc Molist 1
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**
**Sponsored by American Meat Science Association and National Pork Board**
8:00 AM - 12:00 PM
Ballroom B