8:00 a.m.  10  **Effects of different feeding levels during gestation on gilt reproductive performance during the first lactation**
Leticia Moreira dos Santos¹, Alex Maiorka¹, Carine M. Vier², Weasley A. Orlando², Amanda P. Siqueira³, Gefferson Silva⁴, Ray Nascimento Gonsalves³, Vanderlei Zappani⁵, Evandro Cezar Beraldin⁵, Ning Lu², Steve Dritz²
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. Jenkins¹, Jason C. Woodworth¹, Jordan T. Gebhardt¹, Joel M. DeRouchey¹, Mike D. Tokach¹, Robert D. Goodband¹
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 Boler¹, Jeremy Perez¹, Eric Parr¹, Michael Welch¹, Kelsey Kyle¹, Danielle Johnson¹, Casey Neil¹, Jorge Estrada²
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 Galiot², Frédéric Guay¹, Gabrielle Dumas², Charlotte Gaillard³, Jean-Yves DOURMAD⁴, Aude Simongiovanni⁵, Patrick Gagnon², Marie-Pierre Léténeau-Montminy¹
¹Laval University, ²Centre de développement du porc du Québec, ³INRAE, Institut Agro, ⁴INRAE UMR PEGASE, ⁵METEX 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 A. 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, Ron Aldwin S. Navales⁵
¹Genus PIC, ²Carthage Veterinary Service, ³Carthage Veterinary Services, ⁴Carthage Innovative Swine Solutions, ⁵Kansas State University
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, Jorge Y. Perez-Palencia, Jinsu Hong, Kevin J. Herrick, Melissa L. Jolly-Breithaupt, Crystal L. Levesque
South Dakota State University, University of Minnesota, POET Bioproducts

Effects of fiber supplementation during gestation on sow and piglet performance
Carine M. Vier, Alexandra Möller Alves, Ines Andretta, Gabriel Martins, Jéssica Pereira, Weasley A. Orlando, Amanda P. Siqueira, Vitor Hugo Moita
Genus PIC, UFRGS, Agroceres PIC

Effect of branched-chain amino acids on lactating sow and piglet performance
Dalton C. Humphrey, Keith D. Haydon, Laura L. Greiner
Iowa State University, CJ Bio America

Evaluation of precision feeding standardized ileal digestible lysine to meet the lactating sow’s requirement
Mikayla Spinler, Jordan T. Gebhardt, Joel M. DeRouchey, Mike D. Tokach, Robert D. Goodband, Hyatt Frobose, Amanda Ultermark, Jason C. Woodworth
Kansas State University, JYGA Technologies

Effect of precision feeding standardized ileal digestible lysine to lactating sows compared to conventional feeding strategies in a commercial farm
Mikayla Spinler, Jordan T. Gebhardt, Joel M. DeRouchey, Mike D. Tokach, Robert D. Goodband, Hyatt Frobose, Amanda Ultermark, Vitor Hugo Moita, Jason C. Woodworth
Kansas State University, JYGA Technologies, Genus PIC

Effects of a stabilized fish oil on boar semen quality when fed during summer months
Bradley A. Didion, Jamie Hundley, Michael Kleve-Feld, Tom Gall, Carine M. Vier, Amanda Middleton, Weasley A. Orlando, Ning Lu, Malcom Ballard, Wayne R. Cast, Mike Parsley, Steve Dritz, Kent Burgess
Genus PIC, Pig Improvement Company Inc., PIC North America, Feedworks USA Research Consultant, The Ballard Group, Feedworks USA

Feeding the early gestating gilt during heat stress: implications towards fetal viability, growth, and development
MaryKate H. Byrd, Kara R. Stewart, J. Alex A. Pasternak, Jay S. Johnson
Purdue University, USDA-ARS Livestock Behavior Research Unit
8:15 a.m.  PS-1  An evaluation of sodium salicylate in the periparturient management of the sow  
Lauren Olson 1, Eric Weaver 1  
1South Dakota State University

8:15 a.m.  PSI-10  Combination of probiotic Bacillus licheniformis and Bacillus coagulans in sow diets improves litter quality and piglet performance  
Patricia Alvarenga 1, Alexandra Schlagheck 2, Lydia Zeibich 2, Sarah Asmussen 3  
1Biochem Brasil Nutricacao Animal Ltda, 2Biochem Zusatzstoffe Handels- und Produktionsges mbH, 3Livestock feed tests Denmark ApS

8:15 a.m.  PSI-2  Daily thermoregulatory performance patterns of Duroc boars with or without electronically controlled floor cooling pads during the peak summer heat stress period  
Daphne Licuan 1, Kara R. Stewart 1, Jamie Hundley 2, RJ Nepomuceno 3, Matt Robins 3, Randolph Crasto 3, Bradley A. Didion 4, Michael Kleve-Feld 5, Jung Y. Sung 1, Allan P. Schinckel 1  
1Purdue University, 2Pig Improvement Company Inc., 3Innovative Heating Technology, 4Genus PIC, 5PIC North America

8:15 a.m.  PSI-11  Determination of standardized total tract phosphorus digestibility in expeller-pressed Canadian prairie grown soybean meal fed to growing pigs  
Shiven Patel 1, Jinyoung Lee 1, Neijat Mohamed 1, Chengbo Yang 1, James House 1, Rob Patterson 2, C. Martin Nyachoti 1  
1University of Manitoba, 2CBS Bio Platforms Inc.

8:15 a.m.  PSI-12  Dietary isoacids modulate nutrient digestibility and fermentation products in ileal digesta and feces of growing pigs fed corn-soybean meal diets  
Angie P. Benavides Infante 1, Jorge Y. Perez-Palencia 1, Crystal L. Levesque 1, Lucas Rodrigues 2, Mike Socha 2, Wesley Schweer 2  
1South Dakota State University, 2Zinpro Corporation

8:15 a.m.  PSI-13  Digestible and metabolizable energy concentrations in soybean meal, fermented soybean meal, and soy protein concentrate fed to nursery pigs  
Yoon Soo Song 1, Beob Gyun Kim 1  
1Konkuk University

8:15 a.m.  PSI-14  Effect of dietary xylanase supplementation on growth performance, nutrient digestibility, and digesta viscosity of weaned pigs fed wheat-soybean meal-based diets  
Sydney Sheffield 1, Keith D. Haydon 2, Crystal L. Levesque 1, Jorge Y. Perez-Palencia 1  
1South Dakota State University, 2CJ Bio America
8:15 a.m.  PSI-3  Effect of feed and water consumption patterns during the lactation period on wean-to-estrus interval in weaned sows
Magdiel Lopez Soriano 1
1University of Missouri–Columbia Swine Extension

8:15 a.m.  PSI-15  Effect of feeding intact protein from soybean meal instead of crystalline amino acids on energy and nitrogen balance by growing pigs
Minoy Cristobal 1, Su A Lee 1, Leidy J. Torres-Mendoza 1, Andrea P. Mallea 1, Carl M. Parsons 2, Hans H. Stein 1
1University of Illinois at Urbana-Champaign, 2University of Illinois Urbana-Champaign

8:15 a.m.  PSI-16  Effect of HiPhorius phytase on finishing pig growth performance and bone mineralization with the use of two diet formulation strategies
Macie E. Reeb 1, Macie E. Reeb 1, Jason C. Woodworth 2, Joel M. DeRouchey 2, Mike D. Tokach 2, Robert D. Goodband 2, Jordan T. Gebhardt 2, Jon R. Bergstrom 3
1AMVC, 2Kansas State University, 3dsf-firmenich

8:15 a.m.  PSI-17  Effect of timing of high dietary zinc supplementation on the microbiome of gestating sows and their piglets
Kelsey L. Hammers 1, Pedro E. Urriola 2, Mark Schwartz 3, Moon-Suhn Ryu 4, Andres Gomez 1, Noor Huma 1, Lee J. Johnston 5
1University of Minnesota, 2University of Minnesota College of Food, Agricultural and Natural Resource Sciences, 3Schwartz Farms, 4Yonsei University, 5West Central Research and Outreach Center, University of Minnesota

8:15 a.m.  PSI-18  Effects of heat treatment and multi-carbohydrase supplementation on the digestibility of phosphorus in field peas fed to growing pigs
Jinyoung Lee 1, Rob Patterson 2, C. Martin Nyachoti 1
1University of Manitoba, 2CBS Bio Platforms Inc.

8:15 a.m.  PSI-4  Evaluation of chemical mitigants when soybean meal was inoculated with porcine epidemic diarrhea virus, porcine reproductive and respiratory virus, and Seneca Valley virus 1
Olivia Harrison 1, Jianfa Bai 1, Martee Larson 1, Roman Pogranichnyi 1, Francisco Domingues 2, Nicole Holcombe 2, Othmar Lopez 2, Cassandra K. Jones 1
1Kansas State University, 2Anitox Corporation

8:15 a.m.  PSI-5  Evaluation of EhV (surrogate for African swine fever virus) inactivation in corn- and soybean-based feed ingredients and diets at various times and temperatures during storage
Christian Ramirez 1, Declan Schroeder 1, Gerald C. Shurson 1, Pedro E. Urriola 2
1University of Minnesota, 2University of Minnesota College of Food, Agricultural and Natural Resource Sciences
8:15 a.m.  PSI-6  Growth performance of weaned pigs fed an activated zinc oxide to replace pharmacological content of dietary zinc oxide
Christian Ramirez ①, Charlotte Heyer ②, Daniel Berghaus ③, Hayford Manu ①, Pierre Frumholtz ②, Pedro E. Urriola ④
①University of Minnesota, ②Provita Supplements Inc., ③ISF GmbH, ④University of Minnesota College of Food, Agricultural and Natural Resource Sciences

8:15 a.m.  PSI-19  Growth performance of weaned pigs fed Jerusalem Artichoke tubers
Natalie A. Erker ①, Talia K. Everding ①, Alison C. Neujahr ①, Duncan B. Paczosa ②, Phillip S. Miller ①, Thomas E. Burkey ①
①University of Nebraska–Lincoln, ②University of Nebraska-Lincoln

8:15 a.m.  PSI-7  Hourly flushing rates and temperature trends for electronically controlled grouped floor cooling pads trends during the summer heat stress in a boar stud
Daphne Licuan ①, Kara R. Stewart ①, Jamie Hundley ②, RJ Nepomuceno ③, Matt Robins ③, Randolph Crasto ③, Bradley A. Didion ④, Michael Kleve-Feld ⑤, Jung Y. Sung ①, Allan P. Schinckel ①
①Purdue University, ②Pig Improvement Company Inc., ③Innovative Heating Technology, ④Genus PIC, ⑤PIC North America

8:15 a.m.  PSI-8  Impact of feeding level on boars from selection to entering the boar stud on trainability and growth measurements
Taw Scaff ①, Alicia N. Denton ①, Ally ford ①, Emma Zaicow ①, Brian T. Richert ①, Kara R. Stewart ①
①Purdue University

8:15 a.m.  PSI-20  Isobutyrate supplementation improved energy and nitrogen digestibility in prepubertal gilts fed a high insoluble, but not soluble, fiber diet
Wesley Schweer ①, Lucas Rodrigues ①, Alyssa S. Cornelison ①, Mike Socha ①, Brian J. Kerr ②
①Zinpro Corporation, ②USDA

8:15 a.m.  PSI-21  Optimizing sample size for accurate measurements and prediction equations for intestinal morphology in broiler chickens
Emmanuel O. Alagbe ①, Jung Y. Sung ①, Kylee Lindsey ②, J. Alex A. Pasternak ①, Olayiwola Adeola ①
①Purdue University, ②Michigan State University

8:15 a.m.  PSI-9  Relationship of body condition measures and boar reproductive performance
Hailey M. Hedrick ①, Caleb J. Grohmann ②, Amanda Minton ③, Timothy J. Safranski ①
①University of Missouri, ②University of Missouri–Columbia, ③AcuFast Genetics
Nonruminant Nutrition II - Grow-Finish I
Chair: Andres Tolosa, Kansas State University
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 P. Siqueira 1, Carine M. Vier 2, Weasley A. Orlando 2, Vitor Hugo Moita 2, Caio Abercio Silva 3
1Agroceres PIC, 2Genus PIC, 3State University of Londrina

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 A. 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 A. 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, 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 Camp 1, Carine M. Vier 1, Matthew Spindler 1, Julia Holen 2, Weasley A. 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 E. Zaragoza 1, Carine M. Vier 1, Julia A. Calderon Diaz 1, Weasley A. Orlando 1, Ellie Hewett 2, Simon Turner 2, Jorge Estrada 3, Jordi Camp 1, Wayne R. Cast 1, Steve Dritz 1, Craig Lewis 4
1Genus PIC, 2SRUC, 3Carthage Veterinary Service, 4PIC Europe

Ruminant Nutrition Symposium
Chair: Kendall Swanson, North Dakota State University
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
Hilário C. Cuquetto Mantovani 1
1Department of Animal and Dairy Science, University of Wisconsin-Madison, Madison, WI, USA

10:20 a.m. 8 CANCELLED - 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 CANCELLED - Use of new technology to measure methane emissions
Logan R. Thompson 1, Matthew R. Beck 2
1Kansas State University, 2USDA-ARS
8:30 a.m.  **Physiology Symposium Introduction**

8:35 a.m.  1  **The role of gut microbiota on regulation of growth and metabolism by branched-chain amino acids**
Adel Pezeshki 1
1Oklahoma State University

9:15 a.m.  2  **Another renaissance for bile acid gastrointestinal microbiology**
Jason Ridlon 1
1University of Illinois at Urbana-Champaign

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

10:10 a.m.  3  **The impact of early-life cecal microbiota transplantation on injurious behaviors in egg-laying chickens**
Yuechi Fu 1, Jiaying Hu 1, Huanmin Zhang 2, Marisa A. Erasmus 1, Heng-wei Cheng 2, Timothy A. Johnson 1
1Purdue University, 2USDA-ARS

10:50 a.m.  4  **Nutrition and gut microbial ecology in companion animals**
Dayakar V. Badri 1
1Hills PNC

11:30 a.m.  5  **Rumen microbiome and metabolome in dairy cattle performance**
Leluo L. Guan 1
1University of British Columbia

**Poster Session II**
10:00 AM - 10:45 AM
Grand Terrace

10:00 a.m.  PSII-11  **Achieving heavier piglet weights at weaning with live yeast (Saccharomyces cerevisiae) supplementation under field conditions**
Sophie Hiscocks 1, Gustavo Cordero 1, Laura A. Merriman 1, Pete Wilcock 1, Samuel F. Leiva 2, David S. Rosero 3
1AB Vista, 2The Hanor Company, Inc., 3Iowa State University

10:00 a.m.  PSII-8  **Analysis of maternal influence on Phenotypic Ultrasound Measurements of weaned Angus calves**
Sarah L. Phelps 1, Garland Dahlke 1, Mary E. Reynolds 1, Miranda Culbertson 1
1Iowa State University
10:00 a.m.  PSII-1  Bacillus-based probiotic supplementation to sows and weaned progeny help to support live performance and manage gross lung lesions in a nursery H1N2 Influenza challenge
Keith P. Kinsley 1, Adam Mueller 2, Mark J. Bertram 3, Lea Hubertz B. Hansen 4, Steve P. Lerner 5
1Chr-Hansen Inc., 2Swine Services Unlimited Inc., 3First Choice Livestock, 4Chr Hansen A/S, 5Novonesia

10:00 a.m.  PSII-10  Development of an interdisciplinary undergraduate and graduate course in precision livestock farming systems
Suzanne M. Leonard 1
1North Carolina State University

10:00 a.m.  PSII-12  Dose-dependent effects of supplemental benzoic acid on nitrogen balance, urinary pH, slurry pH, and manure odorous compounds in pigs
Seung B. Yoo 1, Yoon Soo Song 1, Siyoung Seo 2, Beob Gyun Kim 1
1Konkuk University, 2National Institute of Animal Science

10:00 a.m.  PSII-14  Economic impact of adding exogenous enzymes in a sorghum-based diet for growing and finishing pigs
Sibely Flores 1, Roberta Santos 1, Sudario Roberto Silva Junior 2, Pedro Henrique Pereira 1, Ygor H. Paula 1, Caio Pereira 1, VINICIUS S. CANTARELLI 3, Rhuan F. Chaves 4, Claudia Martins 3, Vitor Fascina 5, Leandro Alebrante 5
1Universidade Federal de Lavras, 2University of Minnesota, 3AnimalNutri, 4AnimalNutri - Science and Technology, 5DSM Nutritional Products Brazil SA

10:00 a.m.  PSII-15  Effect of 25-hydroxyvitamin D3 supplementation on growth performance of nursery pigs
Eva Safaie 1, Chan Ho Kwon 1, Savannah Locke 1, Jannell Torres 1, Setareh Khani 1, Sarah Han 1, Young Dal Jang 1
1University of Georgia

10:00 a.m.  PSII-7  Effect of endophyte-infected tall fescue on body weight, vital signs, and liver function of beef heifers
Joao Vitor G. Takashe 1, Ahmed Sallem 1, Jackson Matthews 1, Daniel W. Shike 2, Camila U. Braz 1
1University of Illinois at Urbana-Champaign, 2University of Illinois Urbana-Champaign

10:00 a.m.  PSII-16  Effect of iron injection levels and second iron injection on preweaning growth performance and hematological parameters
Eva Safaie 1, Savannah Locke 1, Sarah Han 1, Jannell Torres 1, Setareh Khani 1, Young Dal Jang 1
1University of Georgia

10:00 a.m.  PSII-2  Effect of piglet processing and castration on growth performance in feeder pigs
Emily R. Church 1, Benjamin Carpenter 1, Grady A. Privett 1, Amanda Holder 1
1College of the Ozarks
10:00 a.m.  PSII-17  Effect of protease supplementation on amino acids digestibility of soybean meal fed to growing pigs of different ages
Gabriela M. Miotto Galli 1, Angie P. Benavides Infante 2, Crystal L. Levesque 2, VINICIUS S. CANTARELLI 3, Rhuan F. Chaves 4, Claudia C. Silva 5, Vitor Fascina 6, Jorge Y. Perez-Palencia 2
1Universidade Federal do Rio Grande do Sul, 2South Dakota State University, 3AnimalNutri, 4AnimalNutri - Science and Technology, 5dsm-firmenich, 6DSM Nutritional Products Brazil SA

10:00 a.m.  PSII-13  Effects of benzoic acid, bromelain, adipic acid, and humic substance supplementation on nitrogen balance, urine pH, slurry pH, and manure odorous compounds in pigs
Seung B. Yoo 1, Yoon Soo Song 1, Siyoung Seo 2, Beob Gyun Kim 1
1Konkuk University, 2National Institute of Animal Science

10:00 a.m.  PSII-18  Evaluating the effects of sodium diformate on finishing pig growth performance
Katelyn N. Gaffield 1, Joel M. DeRouchey 1, Mike D. Tokach 1, Jason C. Woodworth 1, Robert D. Goodband 1, Mariana Menegat 2, Mary Liebenstein 2, Matt W. Allerson 2, Jordan T. Gebhardt 1
1Kansas State University, 2Holden Farms

10:00 a.m.  PSII-3  Evaluation of a microneedle patch for the delivery of meloxicam in a veterinary application
Kirsten A. Midkiff 1, Katherine Miranda-Munoz 1, Robin A. Cheek 1, Jana L. Reynolds 1, Tsung Cheng Cheng Tsai 1, Misty Bear 2, Kushan Kompalage 3, Ryan Tucker 3, Hans F. Coetzee 2, Elizabeth B. Kegley 4, Jorge Almodovar 1, Jeremy G. Powell 4
1University of Arkansas, 2Kansas State University College of Veterinary Medicine, 3Kansas State University, 4University of Arkansas System, Division of Agriculture, Department of Animal Science

10:00 a.m.  PSII-19  Fecal microbiota composition of weaned piglets under mixed management and poor housing conditions fed diets increased in threonine, methionine and tryptophan
Danilo Alves Marçal 1, Antônio Diego Brandão Brandão Melo 2, Joseane Penteado Rosa Gonçalves 3, Qinnan Yang 4, Marllon José Karpeggiane de Oliveira 5, Pedro Righetti Arnaud 2, Manoela Trevizan Ortiz 3, Ismael França 2, Graziela Alves da Cunha Valini 6, Nate Korth 7, Natasha Pavlovikj 4, Paulo Henrique Reis Furtado Campo 8, Henrique Gastmann Gastmann Brand 9, John K. Htoo 10, João Carlos Gomes-Neto 7, Andrew Benson 4, Luciano Hauschild 2
1São Paulo State University (UNESP), 2São Paulo State University - School of Agricultural and Veterinary Sciences, 3São Paulo State University, 4University of Nebraska–Lincoln, 5School of Agricultural and Veterinarian Sciences, Universidade Estadual Paulista (Unesp), São Paulo, Jaboticabal, Brazil, 14884-900., 6AAFC and UNESP, 7University of Nebraska, Lincoln, NE, USA, Nebraska Food for Health Center, University of Nebraska, Lincoln, NE, USA., 8Federal University of Viçosa, 9Evonik Brasil Ltda, 10Evonik Operations GmbH
10:00 a.m.  PSII-21  Feed intake and growth of young turkeys in the brood when supplemented with Viribus Essentials, a blend of botanical extracts and natural flavors
Fredrik Sandberg, Steve J. England, Woong Bi Kwon, Robert Fischer, Pornpim Aparachita
Furst-McNess Company

10:00 a.m.  PSII-20  Feeding behavior of pigs fed dietary amino acid levels adjusted according to the circadian rhythm
Alini Mari Veira, Luan Sousa Dos Santos, Danilo Alves Marçal, Antônio Diego Brandão, Luciano Hauschild
São Paulo State University - School of Agricultural and Veterinary Sciences

10:00 a.m.  PSII-4  Temperature preference of nursery pigs housed in groups by weaning weight quartile
Jenny Morris, Mike Ellis, Caleb M. Shull
University of Illinois at Urbana-Champaign, The Maschhoffs, LLC

10:00 a.m.  PSII-5  Temperature preference of nursery pigs housed in groups with mixed body weight
Jenny Morris, Mike Ellis, Caleb M. Shull
University of Illinois at Urbana-Champaign, The Maschhoffs, LLC

10:00 a.m.  PSII-6  The interactive effects of deoxynivalenol and lipopolysaccharides on gut integrity and inflammation in IPEC-J2 cells
Hang Lu, Julie Simmons, Adrienne Woodward, Nathan Horn
United Animal Health

10:00 a.m.  PSII-9  Whole genome sequences of two nitrate-reducing strains of *Selenomonas ruminantium* isolated from the rumen
Margaret K. Costello, Steven C. ricke, Jennifer McClure, Robin C. Anderson
University of Wisconsin–Madison, USDA-ARS, United States Department of Agriculture, Agricultural Research Service, Food and Feed Safety Research Unit
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 3, Lee Schulz 2, Kara R. Stewart 4, Jack C. Dekkers 5, Laura L. Greiner 2, Nicholas K. Gabler 2, Jordan T. Gebhardt 1
1Kansas State University, 2Iowa State University, 3Animal Science, Iowa State University, 4Purdue University, 5Departments of Animal Science, Iowa State University

1:35 p.m.  38  Pig survival–current state of the US swine industry
Josh Flohr 1, Noel H. Williams 1, Hadley Williams 1
1Seaboard Foods

2:20 p.m.  39  Using genetics and technology to improve swine robustness
Dan Hamilton 1, Miranda Culbertson 2, Justin W. Holl 1
1Genus PIC, 2Iowa State University

3:05 p.m.  Swine Translational Symposium Break

3:20 p.m.  40  Feeding and managing enteric challenged pigs
Nicholas K. Gabler 1
1Iowa State University

4:05 p.m.  41  Is there anything we can do to lessen the severity of PRRSv?
Paul Yeske 1
1Swine Vet Center

4:50 p.m.  42  Group sow housing considerations for improved survival and productivity
Roger Gregory Campbell 1
1RG CAMPBELL ADVISORY
Undergraduate Student Oral Competition
Sponsored by the Gretchen Hill Appreciation Club
Chair: Anna Dilger, University of Illinois Urbana-Champaign
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 N. 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 B. 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 2, Colby A. Redifer 3, Thomas B. McFadden 1, Allison M. Meyer 1
1Division of Animal Sciences, University of Missouri, 2Division of Animal Sciences, College of Agriculture, Food and Natural Resources, University of Missouri, 3University of Missouri

1:45 p.m.  82 Relationships between performance traits and osteochondrosis of the hock in Standardbred racehorses
Ella Frake 1, Nicole Tate 2, Annette McCoy 3, Molly McCue 2
1University of Minnesota - Twin Cities, 2University of Minnesota, 3University 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
Emma G. Prybylski 1, Haley F. Linder 2, Joshua C. McCann 2
1University of Illinois at Urbana-Champaign, 2University of Illinois Urbana-Champaign

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 A. Lloyd 1, Bre Pace 1, Erick Fuentes Cardona 1, Hannah Miller 1, Rachel Self 1, Isabella Murphy 2, Leah M. Kellesvig 3, Michaela Metz 3, Amy L. Petry 2
1University of Missouri, 2University of Missouri, Division of Animal Science, 3Vita Plus
2:45 p.m.  86  Assessment of sow hemoglobin concentration and its impact on farrowing duration  
Sydney L. Sheffield 1, Katlyn 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 B. 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 2, Joshua C. McCann 3, Daniel W. Shike 3  
1University of Illinois, 2University of Illinois at Urbana-Champaign, 3University 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 A. Lloyd 1, Isabella Murphy 2, Hannah Miller 1, Amy L. Petry 2  
1University of Missouri, 2University of Missouri, Division of Animal Science

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. 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
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

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 PHD
Sponsored by the Gretchen Hill Appreciation Club
Chair: Ryan Samuel, South Dakota State University
1:15 PM - 5:30 PM
Hall of Ideas E/H

Impacts of dietary myristic acids on mucosa-associated microbiota in relation to intestinal health and growth parameters of nursery pigs
Hyunjun Choi 1, Gabriel C. Rocha 1, Sung Woo Kim 1
1North Carolina State University

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

Effect of two different implant programs on growth performance and carcass characteristics in beef steers fed to three differing harvest endpoints
Becca B. Grimes Francis 1, John P. Hutcheson 2, Lee-Anne J. Walter 2, Wade T. Nichols 2, Zachary K. Smith 3
1Animal Science/ South Dakota State University, 2Merck Animal Health, 3South Dakota State University

A novel analytical method for identifying periods of increased mortality in individual wean-to-finish pig barns
Caleb J. Grohmann 1, Jared E. Decker 2, Caleb M. Shull 3, Erin J. Lowe 4, Jon Hoek 4, Kevin Schnarr 5, Dale D. Polson 5
1University of Missouri–Columbia, 2University of Missouri - Columbia, 3The Maschhoffs, LLC, 4Summit Smart Farms, 5Boehringer 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 Pogranichny 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, Elizabeth B. Kegley 2, Shane Gadberry 3, Robin A. Cheek 1, Jana L. Reynolds 1, Tom Hess 3, Jeff Sarchet 4, Mitch Blanding 4, Tom Short 4, Jeremy G. Powell 2
1University of Arkansas, 2University of Arkansas System, Division of Agriculture, Department of Animal Science, 3University of Arkansas System Division of Agriculture, 4Zoetis

2:45 p.m.  62  Implications of factor analyses and Bayesian network learning to develop composite traits of size attributes in developing beef heifers
Muhammad Anas 1, Bin Zhao 2, Carl R. Dahlen 2, Kendall C. Swanson 3, Kris A. A. Ringwall 2, Lauren L. Hanna 2
1NDSU, 2North Dakota State University, 3Department of Animal Sciences, North Dakota State University

3:00 p.m.  70  Determination of phosphorus release of Microtech phytase in nursery pig diets
Ron Aldwin S. Navales 1, Katelyn N. 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 1
1Purdue 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 Urbana-Champaign

4:30 p.m. 75 Diet acid-binding capacity-4 influences nursery pig performance and fecal dry matter
Ethan B. 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 2
1University of Wisconsin–Madison, 2University 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. Brito 2, Tom W. Murphy 3, Carrie S. Wilson 4, Ronald M. Lewis 5
1University of Nebraska-Lincoln, 2Department of Animal Sciences, Purdue University, West Lafayette, IN, 47907, USA, 3USDA, ARS, Roman L. Hruska U.S. Meat Animal Research Center, 4USDA-ARS-RSPER, 5University of Nebraska - Lincoln

Nonruminant Nutrition III - Enzymes
Chair: Yuan-Tai Hung, Devenish Nutrition
1:45 PM - 5:15 PM
Ballroom D

1:45 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
Macie E. Reeb 1, Macie E. Reeb 1, Jon R. Bergstrom 2, Jordan T. Gebhardt 3, Robert D. Goodband 3, Mike D. Tokach 3, Joel M. DeRouchey 3, Jason C. Woodworth 3
1AMVC, 2dsmpfmenich, 3Kansas State University

2:00 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
2:15 p.m.  45  Awardee Talk: 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 R. 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, Haitham Yakout 2
1Adisseo France SAS, 2Adisseo North America

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

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 1, Jinsu Hong 4
1South Dakota State University, 2CBS Bio Platforms Inc., 3USDA, 4University of Minnesota
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 B. Kunef 1, David S. Rosero 2, Ximena Paz 3, Samuel F. Leiva 3, Pete Wilcock 4, Eric van Heugten 1, Amanda Elsbernd 3
1North Carolina State University, 2Iowa State University, 3The Hanor Company, Inc., 4AB Vista

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, Haitham Yakout 2
1Adisseo France SAS, 2Adisseo North America

Ruminant Nutrition I
Chair: Zachary Smith, South Dakota State University
2:00 PM - 3:45 PM
Meeting Room K-O-L-P

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 2, Stephanie L. Hansen 1
1Iowa State University, 2Iowa State University

Effect of diet mixing strategies on growth performance and carcass characteristic in feedlot steer
Naomi L. Waldon 1, Lyda Garcia 1, Doug Clevenger 1, Alejandro E. Relling 1
1The Ohio State University

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 B. Grimes Francis 2, Zachary K. Smith 1, Forest L. Francis 1, Cassidy R. Ross 1, Jeff S. Heldt 3, Warren C. Rusche 1, Emma H. Wall 4
1South Dakota State University, 2Animal Science/ South Dakota State University, 3Selko USA, 4Nutreco

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 Research, 3Kendall Karr Consulting

Effects of phase feeding rolled hybrid rye on feedlot performance in backgrounded beef steers
Riley J. Leeson 1, Erin R. DeHaan 1, Justin J. Delver 1, Forest L. Francis 1, Becca B. Grimes Francis 2, Thiago L. Maia Ribeiro 1, Zachary K. Smith 1, Warren C. Rusche 1
1South Dakota State University, 2Animal Science/ South 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 at Urbana-Champaign, 2Illinois State University, 3University of Illinois Urbana-Champaign

3:30 p.m.  204  Detecting subclinical mastitis in meat-breed ewes using infrared thermography
Gretchen Peckler 1, Sarah J J Adcock 2
1University of Wisconsin-Madison, 2University of Wisconsin Madison

Graduate Student Oral Competition MS
Sponsored by the Gretchen Hill Appreciation Club
Chair: Kwangwook Kim, Michigan State University
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 H. 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. Maria S. Mendoza 2, John K. Htoo 3, C. 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, 2USDA, ARS, Roman L. Hruska U.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. Maxwell 1, Tsung Cheng 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 2, Stephanie L. Hansen 1
1Iowa State University, 2Iowa State University
3:15 p.m.  Graduate Student Oral Competition MS Break

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 Cristobal ¹, 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 ², Radiah C. Minor ¹
¹North Carolina A&T State University, ²Purdue 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 R. Ross ¹, Erin R. DeHaan ¹, Forest L. Francis ¹, Becca B. Grimes Francis ², Thiago L. Maia Ribeiro ¹, Zachary K. Smith ¹, Warren C. Rusche ¹
¹South Dakota State University, ²Animal Science/ South 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 B. Menezes ², Jennifer L. Hurlbert ¹, Kazi Sarjana Safain ¹, Kerri A. Bochantin ¹, Julia Travassos da Silva ¹, Pauliane Pucetti ¹, James D. Kirsch ¹, Kevin K. Sedivec ³, Kendall C. Swanson ⁴, Carl R. Dahlen ¹
¹North Dakota State University, ²South Dakota State University, ³NDSU, ⁴Department of Animal Sciences, North Dakota State University

4:30 p.m.  105  Water quality analysis and flow rate comparison between wean-finish swine barns
Olivia C S Kittel ¹, Suzanne M. Leonard ², Mark Knauer ², Glen Almond ¹
¹NCSU, ²North Carolina State University
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 O. 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**
Xin Gen Lei 1
1Cornell University

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, C. Martin Nyachoti 1
1University of Manitoba

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**Poster Session III**
4:45 PM - 5:30 PM
Grand Terrace

4:45 p.m. PSIII-7 7&7 Synch improved pregnancy rates in beef cows experiencing estrus over 24 h before fixed-time insemination
Garrett Havelka 1, Friederike Baumgaertner 1, Kerri A. Bochantin 1, Jennifer L. Hurlbert 1, Timothy Long 2, Cody Wieland 1, Kevin K. Sedivec 2, Carl R. Dahlen 1
1North Dakota State University, 2NDSU

4:45 p.m. PSIII-1 Clinical benefits of an in-water essential oil blend on antibiotic-free pigs with post-weaning diarrhea: A field study
Gillian GREAVES 1, Clint LICHTY 1, Ashley L. Wagner 2, Bertrand MEDINA 2, Ivan D. GIRARD 2
1SouthWest Ontario Veterinary Service, 2Probiotech International Inc.
4:45 p.m.  PSIII-17  Comparative assessment of New Generation Phytase (HiPhorius™ vs. Ronozyme HiPhos in growing-finishing pigs
Aileen Joy L. Mercado 1, Terry Weeden 1, Huyen T. Tran 1, Murali Raghavendra Rao 2, Jon R. Bergstrom 3, Brenda de Rodas 1
1Purina Animal Nutrition, 2Purina Animal Nutrition LLC, 3dsf-firmenich

4:45 p.m.  PSIII-14  Effect of a combined supplementation of Bacillus spp. and lactic acid bacteria probiotics on growth performance and fecal score in nursery pigs
Tiffany Petersen 1, Chan Ho Kwon 2, Young Dal Jang 2
1University of Wisconsin–River Falls, 2University of Georgia

4:45 p.m.  PSIII-15  Effect of dietary fatty acids composition on growth performance, fecal consistency, and plasma fatty acid profile of weaned pigs
Alejandra Forero Salamanca 1, Crystal L. Levesque 1, Jorge Y. Perez-Palencia 1
1South Dakota State University

4:45 p.m.  PSIII-16  Effects of dietary corn origin (U.S., Argentina, and Brazil) on pig growth performance
Joseph Halbur 1, Alejandra Forero Salamanca 1, Jordan K. Jansen 1, Jinsu Hong 2, Jorge Y. Perez-Palencia 1, Crystal L. Levesque 1, Shane Mueller 3, Robert C. Thaler 1, Eric Weaver 1
1South Dakota State University, 2University of Minnesota, 3Northern Crops Institute

4:45 p.m.  PSIII-18  Effects of HiPhorius and Ronozyme HiPhos on performance of nursery pigs
Huyen T. Tran 1, Aileen Joy L. Mercado 1, Terry Weeden 1, Jon R. Bergstrom 2, Brenda de Rodas 1
1Purina Animal Nutrition, 2dsf-firmenich

4:45 p.m.  PSIII-4  Evaluating the variability of the dual sugar absorption test as a measure of intestinal permeability in pigs
Cameron S. White 1, Laura L. Greiner 2, Mike D. Tokach 3, Jason C. Woodworth 3, Ryan N. Dilger 4
1University of Illinois at Urbana-Champaign, 2Iowa State University, 3Kansas State University, 4University of Illinois Urbana-Champaign

4:45 p.m.  PSIII-2  Evaluation of medium-chain fatty acids on just-weaned piglet performance and diarrhoea scores: A nursery trial
Bertrand MEDINA 1, Dan BUSSIÈRES 2, Ivan D. GIRARD 1
1Probiotech International Inc., 2Groupe CÉRÉS Inc.

4:45 p.m.  PSIII-3  Evaluation of remote detection of heart rate, respiratory rate, and body temperature for improved detection of bovine respiratory disease in high-risk receiving calves
Robin A. Cheek 1, Elizabeth B. Kegley 2, Jana L. Reynolds 1, Scott Ijaz 1, Kirsten A. Midkiff 1, Jeremy G. Powell 2
1University of Arkansas, 2University of Arkansas System, Division of Agriculture, Department of Animal Science
4:45 p.m.  PSIII-8  **Expression of Toll-Like Receptors in endometrium of gilts during early gestation**  Kyle J. Hickman-Brown 1, Molly S. Smith 1, Brooke E. McAnally 1, Joseph Cain 1, Heewon Seo 1, Claire Stenhouse 2, Fuller W. Bazer 1, Gregory Johnson 1, Jeffrey Wiegert 1, Rebecca K. Poole 1 1Texas A&M University, 2Pennsylvania State University

4:45 p.m.  PSIII-9  **Field fertility following the practice of post-cervical artificial insemination (PCAI) at multiple North American swine units.**  Bradley A. Didion 1, Michael Kleve-Feld 2 1Genus PIC, 2PIC North America

4:45 p.m.  PSIII-19  **Impact of EnduraPig™ and EnduraSow™ supplementation on growth performance of wean to finish pigs naturally infected with porcine reproductive and respiratory syndrome virus**  Aileen Joy L. Mercado 1, Huyen T. Tran 1, Stacie Crowder 2, Brenda de Rodas 1 1Purina Animal Nutrition, 2Purina Animal Nutrition LLC, 3PMI Additives

4:45 p.m.  PSIII-20  **Impact of EnduraPig™ on Performance of PRRSV-Negative growing-finishing pigs**  Huyen T. Tran 1, Aileen Joy L. Mercado 1, Murali Raghavendra Rao 2, Stacie Crowder 3, Brenda de Rodas 1 1Purina Animal Nutrition, 2Purina Animal Nutrition LLC, 3PMI Additives

4:45 p.m.  PSIII-21  **Impact of high zinc oxide supplementation or lignocellulose supplement on chronic markers of intestinal inflammation and growth of weaned piglets**  Eya Selmi 1, Antony T. Vincent 2, Marie-Pierre Létourneau-Montminy 1, Luca Lo Verso 1, Frédéric Guay 1 1Laval University, 2Département des sciences animales, Université Laval

4:45 p.m.  PSIII-10  **Impact of late gestation vitamin A and D injection on offspring growth and immune parameters in piglets**  Samantha Yankocy 1, Laura Loughlin 1, Rachel Walker 1, Elizabeth A. Hines 1 1Penn State University

4:45 p.m.  PSIII-5  **Impact of multiple suckling of litters during lactation on pre-weaning piglet performance**  Noah Gainey 1, Caleb M. Shull 2, Mike Ellis 1 1University of Illinois at Urbana-Champaign, 2The Maschhoffs, LLC

4:45 p.m.  PSIII-11  **Impacts of late gestational in utero heat stress on small intestine dynamics of neonatal dairy calves**  Maverick C. Guenther 1, Brittney D. Davidson 1, Sena Field 1, Bethany Dado-Senn 1, Geoffrey Dahl 2, Michael A. Steele 3, Lautaro Rostoll Cangiano 1, Jimena Laporta 4 1University of Wisconsin–Madison, 2University of Florida, 3Department of Animal Bioscience, University of Guelph, Guelph, ON, Canada, 4University of Wisconsin-Madison
4:45 p.m.  PSIII-12  Influence of early gestational heat stress on biomarkers of mammary gland development in replacement gilts genomically selected for thermotolerance or thermosensitivity
Jacob Musa 1, MaryKate H. Byrd 1, Theresa M. Casey 1, Luiz F. Brito 2, Aridany Suarez-Trujillo 3, Allan P. Schinckel 1, Christian Maltecca 4, Francesco Tiezzi 5, Jay S. Johnson 6
1Purdue University, 2Department of Animal Sciences, Purdue University, West Lafayette, IN, 47907, USA, 3Berry College, 4Department of Animal Science, North Carolina State University, 5University of Florence, 6USDA-ARS Livestock Behavior Research Unit

4:45 p.m.  PSIII-13  Putative metabolites for sow lifetime opportunity and production traits
Lea A. Rempel 1, Robert Lee 2
1USDA-ARS US Meat Animal Research Center, 2USDA, ARS, USMARC

4:45 p.m.  PSIII-6  Tail damage caused by tail biting in growing-finishing pigs housed in two group sizes
Yuzhi Li 1, Courtney A. Archer 2, Adrienne Hilbrands 1, Ty B. Schmidt 3, Benny E. Mote 4, Lee J. Johnston 1
1West Central Research and Outreach Center, University of Minnesota, 2University of Minnesota, 3University of Nebraska, 4University of Nebraska-Lincoln

Tuesday, March 12, 2024

Poster Session IV-A - Sponsored by Gretchen Hill Appreciation Club
7:30 AM - 8:30 AM
Grand Terrace

7:30 a.m.  PSIV-A-1  Comparing early and late spring grazing of cereal rye utilizing a high-density, short-duration grazing system
Rachel Stone 1, Joshua C. McCann 2, Keela Trennepohl 1
1Western Illinois University, 2University of Illinois Urbana-Champaign

7:30 a.m.  PSIV-A-2  Comparison of rising plate meter and total collection methods for forage mass determination of tall fescue
Fernando Delgado 1, Kylie P. Ewing 1, Joshua C. McCann 2, Daniel W. Shike 2
1University of Illinois at Urbana-Champaign, 2University of Illinois Urbana-Champaign

7:30 a.m.  PSIV-A-3  Effect of fiber and stimbiotic on growth performance and the gut microbiome in pigs challenged with F18 enterotoxigenic Escherichia coli (ETEC).
Erika Shirer 1, Alisun N. Watson 1, Robert Story 1, Charles V. Maxwell 1, Spenser L. Becker 2, Pete Wilcock 2, Amanda J. Gearhart 3, Jiangchao Zhao 1, Tsung Cheng Cheng Tsai 1
1University of Arkansas, 2AB Vista, 3JBS Live Pork
7:30 a.m.  PSIV-A-4  Effect of late gestational nutrient restriction on locomotor activity of beef heifers
Mattie T. DeHaven 1, Colby A. Redifer 1, Abigail R. Rathert-Williams 2, Allison M. Meyer 3
1University of Missouri, 2Division of Animal Sciences, College of Agriculture, Food and Natural Resources, University of Missouri, 3Division of Animal Sciences, University of Missouri

7:30 a.m.  PSIV-A-5  Effect of roughage inclusion in limit-fed cow rations on behavior, cow hygiene, and manure scores
Meg Fowler 1, Brayden Freeman 1, Kylie P. Ewing 1, W. Travis T. Meteer 1, Wesley P. Chapple 1, Joshua C. McCann 2, Daniel W. Shike 2
1University of Illinois at Urbana-Champaign, 2University of Illinois Urbana-Champaign

7:30 a.m.  PSIV-A-6  Effects of a yeast cell wall additive on the growth performance and fecal Eimeria load of finishing lambs
Kristen Kahler 1, Payton L. Dahmer 1
1Kansas State University

7:30 a.m.  PSIV-A-7  Effects of late gestational nutrient restriction of beef heifers on small intestinal crypt depth in neonatal calves
Samuel G. Bradshaw 1, Abigail R. Rathert-Williams 2, Colby A. Redifer 1, Allison M. Meyer 3
1University of Missouri, 2Division of Animal Sciences, College of Agriculture, Food and Natural Resources, University of Missouri, 3Division of Animal Sciences, University of Missouri

7:30 a.m.  PSIV-A-8  Effects of meal frequency on heart rate in horses
Alora V. Brown 1, Elizabeth R. Share 1, Nettie Liburt 2, Jessica K. Suagee Bedore 3, Patricia Harris 4, Sara L. Mastellar 5
1The Ohio State University, 2Mars Petcare, 3Virginia Tech School of Animal Sciences, 4Waltham Petcare Science Institute, 5Ohio State University Agricultural Technical Institute

7:30 a.m.  PSIV-A-9  Effects of non-nutritive sweeteners on growth performance and diarrhea of weaned pigs
Mariah Jansen 1, Veronica I. Polniak 1, Andrea M. Luttman 1, Riley Barber 1, Delani Stull 1, Dale W. Rozeboom 1, Kwangwook Kim 2
1Michigan State University, 2Michigan State university

7:30 a.m.  PSIV-A-10  Pilot study: acute changes in mare milk composition in response to concentrate feeding
Carlee Oberlin 1, Savea Zimmerman-Cameron 1, Morgan Pyles 1, Izabell H. Gerbracht 1
1University of Minnesota Crookston

7:30 a.m.  PSIV-A-11  Ruminal in vitro digestibility of novel pennycress meal using the Daisy II incubator
Alyssa Brown 1, Emma G. Prybylski 1, Lauren Neuleib 2, Joshua C. McCann 3, Nicholas Heller 2, Jennifer E. Earing 2
1University of Illinois at Urbana-Champaign, 2Illinois State University, 3University of Illinois Urbana-Champaign
7:30 a.m.  PSIV-A-13  The relationship between breed-wide expected progeny differences, genomic predictors, and phenotypic values in mature Angus cows
Jacy Riddle 1, Amanda Holder 1
1College of the Ozarks

Poster Session IV
7:45 AM - 8:30 AM
Grand Terrace

7:45 a.m.  PSIV-14  Assessing sow and suckling pig hemoglobin status in a single lactation following one or two iron supplementations of piglets in a commercial farm
Aryeri S. Bardales 1, Casey L. Bradley 2, Crystal L. Levesque 1
1South Dakota State University, 2Sunswine Group

7:45 a.m.  PSIV-17  Effects of butyrin-based additive supplementation on nursery pig performance, fecal dry matter, serum cytokines, short chain fatty acid production, and serum chemistry
Ethan B. Stas 1, Jason C. Woodworth 1, Mike D. Tokach 1, Joel M. DeRouchey 1, Robert D. Goodband 1, Jordan T. Gebhardt 1
1Kansas State University

7:45 a.m.  PSIV-15  Effects of dietary supplementation of carbohydrase on growth performance and health status of growing-finishing pigs
Woong Bi Kwon 1, Steve J. England 1, Greg Hartsook 1, Pornpim Aparachita 1, Kevin Soltwedel 1, Robert Fischer 1, Fredrik Sandberg 1
1Furst-McNess Company

7:45 a.m.  PSIV-19  Effects of Flavolac feed top dress in lactation on sow body weight change and litter performance
Rafe Q. Royall 1, Karley Stephens 2, Mike D. Tokach 1, Jason C. Woodworth 1, Joel M. DeRouchey 1, Analia Ribeiro da Silva 3, Kyle Coble 4, Jimmy Karl 4, Paul Corns 4, Tag Bradley 4
1Kansas State University, 2Texas Tech University, 3Agroceres Multimix, 4JBS Live Pork

7:45 a.m.  PSIV-18  Evaluation of lactose level and whey permeate form on nursery pig performance
Ethan B. Stas 1, Jason Frank 2, Tingting Wang 2, Joel M. DeRouchey 1, Mike D. Tokach 1, Jason C. Woodworth 1, Robert D. Goodband 1, Jordan T. Gebhardt 1
1Kansas State University, 2International Ingredients Corporation

7:45 a.m.  PSIV-20  Evaluation of pectinase on nursery pig performance
Mitchell J. Nisley 1, Nicholas K. Gabler 1, Erik Vanderbeke 2, David Nolan 2
1Iowa State University, 2Huvepharma

7:45 a.m.  PSIV-16  Evaluation of specialty soybean products and organic acids to alter nursery diet acid-binding capacity-4 on pig performance and fecal dry matter
Ethan B. 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
7:45 a.m. PSIV-21  **Ileal digestibility of amino acids in feed ingredients for 22-, 56-, and 87-kilogram pigs**
Jung Y. Sung $^1$, Sun Jong Yoo $^2$, Beob Gyun Kim $^2$
$^1$Purdue University, $^2$Konkuk University

7:45 a.m. PSIV-11 **Potential of black soldier fly (Hermetia illucens) larvae frass as a functional ingredient for nursery pigs**
Sarah Rubio $^1$, Izadora B. Kunef $^2$, Fernando Soler $^2$, Charmaine Espinosa $^3$, Liz Koutsos $^3$, Eric van Heugten $^2$
$^1$Zamorano Pan-American Agricultural School and Department of Animal Science, North Carolina State University, $^2$North Carolina State University, $^3$EnviroFlight LLC

**Nonruminant Nutrition IV - Digestibility**
Chair: Jinsu Hong, University of Minnesota
8:00 AM - 10:15 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 $^1$
$^1$University 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 $^1$, C. Martin Nyachoti $^2$
$^1$University of Illinois at Urbana-Champaign, $^2$University 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 Song $^1$, Beob Gyun Kim $^1$
$^1$Konkuk 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 $^1$
$^1$Iowa 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 $^1$
$^1$University of Illinois at Urbana-Champaign
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 2, Sara Llamas-Moya 3, Tri Duong 3, Mark J. Bertram 4, Amy L. Petry 5, Eric Weaver 1
1South Dakota State University, 2University of Minnesota, 3Kerry Inc., 4First Choice Livestock, 5University of Missouri, Division of Animal Science

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

Awardee Talk: Impact of indigestible protein on coccidiosis and meat and bone meal autoclaving time-related reduction in amino acid digestibility for broiler chickens and growing pigs
Jung Y. Sung 1, Darryl Ragland 1, Markus K. Wiltafsky-Martin 2, Olayiwola Adeola 1
1Purdue University, 2Evonik Operations

Growth, Development, Muscle Biology and Meat Science
Chair: Bailey Harsh, University of Illinois Urbana-Champaign
8:00 AM - 10:45 AM
Hall of Ideas F/I

Effects of Saccharomyces yeast postbiotics on nursery pig Muscle fiber cross-sectional area and oxidative capacity
Daniela A. Alambarrio 1, Mathew A. Vaughn 2, Sung Woo Kim 3, John M. Gonzalez 1
1University of Georgia, 2Puretein Bioscience, 3North Carolina State University

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, 2dsf-firmenich

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

Effects of dietary hybrid rye on quality and consumer acceptability of pork from pigs raised under organic conditions
Megan Kavanagh 1, Gabriella Lima 1, Adrienne Hilbrands 2, Ryan Cox 3, Lee J. Johnston 2, Yuzhi Li 2
1Department of Animal Science, University of Minnesota, 2West Central Research and Outreach Center, University of Minnesota, 3University 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 C. 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, 2Aarhus University, Dept. of Animal and Veterinary Sciences, 3University of Guelph - Department of Animal Biosciences (OAC), 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. McCarthy 3, Pawel P. P. Borowicz 4, Lawrence P. P. Reynolds 4, Joel S. S. Caton 4, Carl R. Dahlen 4, Wellison J. S. J. Diniz 5
1NDSU, 2University of Saskatchewan, 3University of Nebraska - Lincoln, 4North Dakota State University, 5Auburn 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 2, Bryon R. Wiegand 1
1University of Missouri, 2University of Missouri, Division of Animal Science

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 C. 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

Harlan Ritchie Symposium - Sponsored by Harlan D. Ritchie Appreciation Club
Chair: Allison Meyer, University of Missouri
8:30 AM - 11:15 AM
Ballroom B

8:30 a.m. Harlan Ritchie Symposium Introduction

8:45 a.m. 309 How do cover crops fit into beef production in a changing climate?
Mary Drewnoski 1
1University of Nebraska
9:30 a.m. 310 Can emerging technology improve beef cattle production in ways we never envisioned?
Jason Nickell ¹
¹Allflex Livestock Intelligence

10:15 a.m. Harlan Ritchie Symposium Break

10:30 a.m. 311 High quality beef: How did we get to this level of production?
Daniel D. Loy ¹, Randie Culbertson ¹
¹Iowa State University

Animal Behavior, Health and Well-Being Symposium
Chair: Stephanie Wetter, The National Pork Board
8:00 AM - 11:30 AM
Hall of Ideas E/H

8:00 a.m. Animal Behavior, Health and Well-Being Symposium Introduction

8:05 a.m. 303 What’s next for animal welfare from a legal perspective?
Elizabeth Rumley ¹
¹University of Arkansas

8:45 a.m. 304 What does Prop 12 mean for the swine industry
Kristina Horback ¹
¹University of California, Davis

9:25 a.m. Animal Behavior, Health and Well-Being Symposium Break

9:40 a.m. 305 Prop 12 has passed: What does that mean for sustainability?
John Scott Radcliffe ¹
¹University of Kentucky

10:20 a.m. 302 Prop 12 passed: What research do swine producers need next?
Liz Wagstrom ¹
¹Wagstrom Consulting, LLC

11:00 a.m. Animal Behavior, Health and Well-Being Symposium Q&A

Nonruminant Nutrition V - Nursery I
Chair: Omarh Mendoza, The Maschhoffs, LLC; Chad Pilcher, Cargill
8:00 AM - 11:30 AM
Hall of Ideas G/J

8:00 a.m. Maxwell Lecture Introduction
Crystal L. Levesque ¹
¹South Dakota State University
8:00 a.m.  301  Maxwell Lecture: Bacillus probiotics in nursery pigs: The effects of dose on gut health and performance
Young Dal Jang 1
1University of Georgia

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
Katlyn A. McClellan 1, Jorge Y. Perez-Palencia 1, Eric Weaver 1, Crystal L. Levesque 1, Jinsu Hong 2
1South Dakota State University, 2University of Minnesota

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.  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

9:30 a.m.  Nonruminant Nutrition V - Nursery I Break

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 2, Eric R. Burrough 1, Nicholas K. Gabler 1
1Iowa State University, 2The 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. María 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 Jayaraman¹, Joaquin Morales², Maria Rodriguez², John K. Htoo¹
¹Evonik Operations GmbH, ²Animal Data Analytics

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. Lawal¹, Tobi Z. Ogunribido¹, Yuechi Fu¹, Olayiwola Adeola¹, Kolapo M. Ajuwon¹
¹Purdue University

11:00 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 B. Stas¹, Mike D. Tokach¹, Jason C. Woodworth¹, Joel M. DeRouchey¹, Robert D. Goodband¹, Jordan T. Gebhardt¹
¹Kansas State University

11:15 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, ³dsf-firmenich

Billy Day Symposium - Sponsored by Billy N. Day Appreciation Club
Chair: Timothy Safranski, University of Missouri
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. Prather¹
¹University of Missouri

8:35 a.m. 116 Gene editing: How are we thinking about it?
Tom Rathje¹
¹DNA Genetics LLC

9:05 a.m. 117 Gene editing on the farm: Current status and future prospects
Benjamin Beaton¹
¹Genus R&D

9:35 a.m. Billy Day Symposium Break

9:55 a.m. 118 Gene editing: A European perspective
Maria Antonia Gil¹
¹University of Murcia
10:25 a.m.  Bentley Lecture Introduction
Laura L. Greiner
\(^1\)Iowa State University

10:30 a.m. 119  Bentley Lecture: Gene editing: A Japanese perspective
Hiroaki Funahashi
\(^1\)Okayama University

11:00 a.m. 120  Gene editing: From the general public perspective
Alison L. Van Eenennaam
\(^1\)University of California, Davis

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

Nonruminant Nutrition Symposium I
Chair: Richard Faris, Cargill; Jorge Perez-Palencia, South Dakota State University
8:00 AM - 11:45 AM
Ballroom A

8:00 a.m.  Nonruminant Nutrition Symposium I Introduction

8:05 a.m. 106  Net energy of soybean meal
Hans H. Stein
\(^1\)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 \(^3\)
\(^1\)Hubbard Feeds, \(^2\)Alltech, \(^3\)Kansas 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 \(^2\), Fengrui Zhang \(^2\), Taiji Wang \(^2\), Gary Stoner \(^2\)
\(^1\)CP Group China, \(^2\)CP 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 \(^3\)
\(^1\)Kansas State University, \(^2\)Hubbard Feeds, \(^3\)Alltech

9:35 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 \(^1\)
\(^1\)Kansas 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
Shuai Zhang 1, Junjun Wang 1, Defa Li 1
1China Agricultural University

10:35 a.m.  112  Nutritional, feed safety, and environmental benefits and limitations of using soybean co-products in swine diets
Zhaohui Yang 1, Pedro E. Urriola 2, Gerald C. Shurson 3
1Nutribins, 2University of Minnesota College of Food, Agricultural and Natural Resource Sciences, 3University 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 L. Trabue 3, Jon R. Bergstrom 4, Estefania Perez-Calvo 5, Laura L. Greiner 1
1Iowa State University, 2Digital Agronomy, LLC, 3USDA ARS, 4ds-firmenich, 5DSM-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

Ruminant Nutrition II
Chair: Kendall Swanson, North Dakota State University
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
1Animal Science/ South Dakota State University, 2South 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 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 2, Mitch M. Norman 2, James C. MacDonald 2, Rick A. Stock 2, Rayan Mass 3, Galen E. Erickson 2
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 2, Mitch M. Norman 2, James C. MacDonald 2, Rick A. Stock 2, Galen E. Erickson 2
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 1, Galen E. Erickson 1, Pablo L. Loza 1
1University of Nebraska-Lincoln

Genetics, Genomics and Bioinformatics Symposium
Chair: Michael Gonda, South Dakota State University
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
1Virginia Tech

10:50 a.m. 124 Artificial Intelligence for high-throughput phenotyping and farm management
Joao R. R. Dórea 1
1University of Wisconsin
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. DeRouche 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 3
1Olmix Group, 2Ghent University, Faculty of Veterinary Medicine, 3Ghent University
Equine Translational Symposium - Sponsored by Pack Pride Racing, LLC  
Chair: Michelle DeBoer, University of Wisconsin–River Falls  
10:30 AM - 1:00 PM  
Meeting Room M-N-Q-R

10:30 a.m.  
**Equine Translational Symposium Introduction**

10:35 a.m.  299  
**Building and maintaining an engaged undergraduate equine research team**  
W. Burton Staniar ¹  
¹Pennsylvania State University

11:20 a.m.  300  
**A microbial perspective on equine nutrition**  
Amy S. Biddle ¹  
¹University of Delaware

12:05 p.m.  312  
**Invited Speaker Dr. Katie Young**  
Katie Young ¹  
¹Kentucky Equine Research (KER)

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**Poster Session V**  
11:45 AM - 12:30 PM  
Grand Terrace

11:45 a.m.  PSV-7  
**greatOPlus (extruded blend of flaxseed and Nannochloropsis oculata biomass) Improves Finishing Cattle Performance and Carcass Characteristics**  
Firman Nasiu ¹, Luis F B B Feitoza ¹, Adrian N. Baker ¹, Ross L. Thorn ¹, Ludmila S. Monteiro ¹, James S. S. Drouillard ¹  
¹Kansas State University

11:45 a.m.  PSV-1  
**A comparison of Holstein-cross cattle and beef-cross cattle in terms of performance and carcass quality**  
Deedra M. Winebold ¹, Rebecca L. Tollefson ¹, Claire Deaton ¹, Adam King ¹, Riley Case ¹, Joel Robertson ¹, Emily R. Church ¹, Amanda Holder ¹  
¹College of the Ozarks

11:45 a.m.  PSV-14  
**Determination of optimal digestible phosphorus level in lactating sows**  
Qiong Hu ¹, Junmei Zhao ¹, Stephanie Walston ¹  
¹Cargill

11:45 a.m.  PSV-8  
**Development of genetically engineered microbes as probiotics to enhance ruminant productivity**  
Tien Doan ¹, Alison C. Neujahr ¹, Samodha C. Fernando ¹  
¹University of Nebraska–Lincoln
11:45 a.m.  PSV-2  Digestible indispensable amino acid scores (DIAAS) in pork products
Juliana Carolina Florencio Ravagnani Martins 1, Natalia Dos Santos Fanelli 1, Hans H. Stein 1
1University of Illinois at Urbana-Champaign

11:45 a.m.  PSV-15  Effect of functional amino acids and fiber on growth performance of post-weaning pigs
Caroline Gonzalez Vega 1, Stephanie Walston 1, Sabrina May 1, Qiong Hu 1, Richard Faris 1
1Cargill

11:45 a.m.  PSV-16  Effect of precision feeding and functional amino acids on immune response and protein metabolism of growing pigs raised in poor sanitary conditions
Pedro Righetti Arnaut 1, Aline Remus 2, Candido Pomar 2, Luciano Hauschild 1
1São Paulo State University - School of Agricultural and Veterinary Sciences,
2AAFC

11:45 a.m.  PSV-9  Effects of increasing amounts of high-oleic or conventional soybeans in diets fed to mid-lactation dairy cows on measures of dry matter intake and lactation
Tiffany Hagemann 1, Emily A. Petzel 1, Eric Bailey 1, Derek W. Brake 1
1University of Missouri

11:45 a.m.  PSV-3  Effects of maternal early gestational weight gain on multigenerational skeletal muscle gene regulation in offspring
1University of São Paulo/North Dakota State University, 2North Dakota State University,
3NDSU, 4Auburn University

11:45 a.m.  PSV-10  Evaluation of the effect of probiotic feed additives in the diet to improve dairy production and quality measures
Riley Case 1, Amanda Holder 1, Ryan Bilyeu 1
1College of the Ozarks

11:45 a.m.  PSV-4  Exposure to prenatal tributyrin improved pre-weaning growth performance and reduced fat deposition in the muscle of market age pigs
Elizabeth Cooper 1, Robert Murray 2, Rousset Palou 1, Grace I. Markley 1, Chad H. Stahl 1
1University of Maryland, College Park, 2University of Maryland

11:45 a.m.  PSV-17  Glycerol monolaurate improves litter performance and modifies milk composition when fed to lactating sows
Chad Risley 1, Johnny Lopez 1, Christian Cordts 2, Fiona von Brandenstein 2
1Berg+Schmidt America, LLC, 2Berg+Schmidt GmbH & Co KG
Impact of precision feeding and bump feeding strategy during gestation on the performance of post-weaning pigs
Carole Pierre 1, Laetitia Cloutier 2, Lucie Galiot 2, Frédéric Guay 1
1Laval University, 2Centre de développement du porc du Québec

Improved performance of PRRSV challenged pigs fed 1-α-glycerol monolaurate
Chad Risley 1, Johnny Lopez 1, Christian Cordts 2
1Berg+Schmidt America, LLC, 2Berg+Schmidt GmbH & Co KG

In vitro screening of selected compounds to reduce ruminal methane production
Alice H. Peres Assumpcao 1, Hilário C. Cuquetto Mantovani 2, Xia Zhu-Barker 1
1University of Wisconsin–Madison, 2Department of Animal and Dairy Science, University of Wisconsin-Madison, Madison, WI, USA

Influence of an oregano-based essential oil on growth performance and carcass traits of beef steers
Bergin M. DeBruin 1, Christina Bakker 1, Zachary K. Smith 1, Keith Underwood 1, Judson K. Grubbs 1, Amanda Blair 1, Warren C. Rusche 1
1South Dakota State University

Microbial community structure of dairy cattle is stable through oscillating crude protein inclusion
Fiorella L. Viquez-Umana 1, Mary Grace Erickson 2, Geoffrey Zanton 2, Michel Wattiaux 2, Garret Suen 2, Hilário C. Cuquetto Mantovani 1
1Department of Animal and Dairy Science, University of Wisconsin-Madison, Madison, WI, USA, 2University of Wisconsin–Madison

Mycotoxin contamination trends in United States corn grain: 2019-2023
Paige N. Gott 1, Lan Zheng 1, Shelby Corray 1, Chasity Pender 1, Sara Hough 2, April Levy 1
1dsm-firmenich, 2dsm-firmenich, Animal Nutrition & Health

Pediococcus acidilactici survives an in vitro simulated digestion
Rebecca Brown 1, Rui Zheng 2, Sheila K. Jacobi 1
1The Ohio State University, 2Ohio State University

The additive effect of hormonal implant and inclusion of beta-agonists in carcass quality in beef cattle
Rebecca L. Tollefson 1, Deedra M. Winebold 1, Claire Deaton 1, Adam King 1, Riley Case 1, Joel Robertson 1, Emily R. Church 1, Amanda Holder 1
1College of the Ozarks
11:45 a.m. PSV-13  The influence of diet type on beef cattle performance and meat quality characteristics
Claire Deaton 1, Rebecca L. Tollefson 1, Adam King 1, Riley Case 1, Joel Robertson 1, Emily R. Church 1, Amanda Holder 1
1College of the Ozarks

Poster Session VI
12:45 PM - 1:30 PM
Grand Terrace

12:45 p.m. PSVI-7  A traceable signature for a recovery microbiome composition after a dysbiosis caused by a sanitary challenge in pigs
Antônio Diego Brandão Brandão Melo 1, Graziela Alves da Cunha Valini 2, João Carlos Gomes-Neto 3, Marllon José Karpeggiane de Oliveira 4, Danilo Alves Marçal 1, Pedro Righetti Arnaut 1, Ismael França 1, Nate Korth 3, Natasha Pavlovikj 5, John K. Htoo 6, Henrique Gastmann Gastmann Brand 7, Andrew K. Benson 3, Luciano Hauschild 1
1São Paulo State University - School of Agricultural and Veterinary Sciences, 2AAFC and UNESP, 3University of Nebraska, Lincoln, NE, USA. Nebraska Food for Health Center, University of Nebraska, Lincoln, NE, USA., 4School of Agricultural and Veterinarian Sciences, Universidade Estadual Paulista (Unesp), São Paulo, Jaboticabal, Brazil, 14884-900., 5University of Nebraska–Lincoln, 6Evonik Operations GmbH, 7Evonik Brasil Ltda

12:45 p.m. PSVI-15  Assessing the implications of a silymarin-enriched diet on the performance and blood absorption rate of broiler and laying hen
Kye Jin Lee 1, Sungbo Cho 1, Sarbani Biswas 1, In Ho Kim 1
1Dankook University

12:45 p.m. PSVI-1  Backgrounding and finishing systems for cattle fed corn silages and corn grains differing in amylase expression
Ludmila de Souza Monteiro 1, James S. S. Drouillard 1
1Kansas State University

12:45 p.m. PSVI-14  Changes in zinc oxide concentration in feed and effects of probiotic addition to weaning to finishing pig diet by microbiome analysis
Sungbo Cho 1, Kye Jin Lee 1, Sarbani Biswas 1, In Ho Kim 1
1Dankook University

12:45 p.m. PSVI-2  Economic evaluation of forage-fed vs concentrate-fed beef finishing systems
Joel Robertson 1, Rebecca L. Tollefson 1, Deedra M. Winebold 1, Claire Deaton 1, Adam King 1, Riley Case 1, Emily R. Church 1, Amanda Holder 1
1College of the Ozarks

12:45 p.m. PSVI-8  Effect of botanical extracts and calcium gluconate fed during lactation on sow and litter performance
Chris P A van de Ligt 1, S. Nielsen 2, N. S. Tillman 3, Emma H. Wall 4
1Selko USA, 2Eagle Estates, 3Nutritional Statistics LLC, 4Nutreco
12:45 p.m.  PSVI-9  **Effect of botanical extracts in diets with nutritional or pharmacological levels of copper and zinc on growth performance and fecal dry matter in nursery pigs**
Ty Kim 1, Jason C. Woodworth 1, Mike D. Tokach 1, Joel M. DeRouchey 1, Robert D. Goodband 1, Jordan T. Gebhardt 1, Chris P A van de Ligt 2, Emma H. Wall 3
1Kansas State University, 2Selko USA, 3Nutreco

12:45 p.m.  PSVI-10  **Effect of sulfate or hydroxychloride forms of zinc, manganese, and copper on growth performance, weight variation, and carcass characteristics of grow-finish pigs**
Hilario M. Cordoba 1, Jason C. Woodworth 1, Robert D. Goodband 1, Joel M. DeRouchey 1, Mike D. Tokach 1, Jordan T. Gebhardt 1, Chris P A van de Ligt 2
1Kansas State University, 2Selko USA

12:45 p.m.  PSVI-3  **Effects of dried distillers grains on performance of suckling beef calves in a creep-feeding system**
Ellem Maria De Almeida Matos 1, Sebastiao De Campos Valadares Filho 2, Gabriel Santos Souza David 3, Nathalia Veloso Tropia 2, Dhones Rodrigues de Andrade 2, Julia Travassos da Silva 2, Pauliane Pucetti 2, Fernando Cidrini 4, Luiz Carlos Oliveira de Sousa 2, Joel S. S. Caton 5
1Universidade Federal de Viçosa, 2Universidade Federal de Viçosa, 3Department of Animal Science, Universidade Estadual Paulista “Júlio de Mesquita Filho” (UNESP), Jaboticabal, São Paulo, Brazil, 4School of Animal Sciences, Virginia Polytechnic Institute and State University, 5North Dakota State University

12:45 p.m.  PSVI-4  **Effects of ruminal acidosis on rumen fermentation of steers adapted to a high concentrate diet**
Haley F. Linder 1, Larry L. Berger 2, Joshua C. McCann 1
1University of Illinois Urbana-Champaign, 2University of Illinois at Urbana-Champaign

12:45 p.m.  PSVI-11  **Effects of S-Abscisic Acid administration on the antioxidative status and glucose absorption in the gut of rats**
Izuru Shinzato 1, Hiroshi Kojo 1, Daisuke Matsui 1, Tsuyoshi Tonoue 1, Takamitsu Tsukahara 2
1Sumitomo Chemical Co., Ltd., 2Kyoto Institute of Nutrition & Pathology, Inc.

12:45 p.m.  PSVI-12  **Effects of sodium gluconate supplementation on growth performances of nursery piglets and growing pigs**
Daisuke Matsui 1, Keiichiro Iwamae 2, Tsuyoshi Tonoue 1, Izuru Shinzato 1
1Sumitomo Chemical Co., Ltd., 2FUSO Corporation Co., LTD.

12:45 p.m.  PSVI-5  **Extruded blend of Nannochloropsis oculata microalgae and flaxseed and its effects on ruminal fermentation and nutrient digestion**
Ross L. Thorn 1, James S. S. Drouillard 1
1Kansas State University
12:45 p.m.  PSVI-13  Formulated botanical preparation improves passive immunity from sows to piglets
Chris P A van de Ligt 1, S. Ravichandran 2, Emma H. Wall 3
1Selko USA, 2AVT Natural North America, 3Nutreco

12:45 p.m.  PSVI-16  Inclusion of dietary micelle silymarin on production performance, egg quality, storage capacity, and blood profile Sin Hy-line brown laying hens
Kye Jin Lee 1, Sungbo Cho 1, Golam Sagir Ahammad 1, In Ho Kim 1
1Dankook University

12:45 p.m.  PSVI-17  Inclusion of glutathione precursor to sows' diet from 114th of lactation through to weaning day 21 improves serum hormone levels and piglet performance
Kye Jin Lee 1, Sungbo Cho 1, Sumaya Tanzin Wahid 1, In Ho Kim 1
1Dankook University

12:45 p.m.  PSVI-18  Low and high feed efficiency grower-finisher pigs fed three different levels of dietary crude protein showed no immediate difference in blood metabolomics profile
Marleen Elise van der Heide 1, Elham Assadi Soumeh 2, Mihai Curtasu 1, Jan Værum Nørregaard 1, Johannes Gulmann Madsen 3
1Aarhus University, 2University of Queensland, 3University of Copenhagen

12:45 p.m.  PSVI-6  Metabolic potential of three novel rumen bacterial species from sheep characterized by utilizing a metagenomic-based approach
Reid F. Anema 1, Zachary K. Smith 1, Benoit St-Pierre 1
1South Dakota State University

12:45 p.m.  PSVI-19  No apparent association between the microbiome in the distal part of the small intestine and feed efficiency in grower-finisher pigs fed three different levels of dietary crude protein
Marleen Elise van der Heide 1, Nilay Büdeyri Gökgöz 2, Dennis Sandris Nielsen 2, Jan Værum Nørregaard 1, Johannes Gulmann Madsen 2
1Aarhus University, 2University of Copenhagen

12:45 p.m.  PSVI-20  The effect of a probiotic feed additive on average daily gain and feed intake
Grady A. Privett 1, Benjamin Carpenter 1, Emily R. Church 1, Amanda Holder 1
1College of the Ozarks

12:45 p.m.  PSVI-21  The effects of soybean meal concentration and Yucca schidigera extract supplementation 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
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 4, Ronald M. Lewis 1
1University of Nebraska - Lincoln, 2USDA, ARS, Dale Bumpers Small Farms Research Center, 3University of Idaho, 4University of Nebraska-Lincoln

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 1, Jicai Jiang 2, Mark Knauer 1, En-Chung Lin 3
1North Carolina State University, 2Department of Animal Science, North Carolina State University, 3National Taiwan 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, Juan P. Steibel 2
1Iowa state university, 2ISU
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 Miller 2
1University of Missouri, Division of Animal Science, 2University of Missouri

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 4, Jeff A. Carroll 5, Michael Cruz Penn 6, Amy L. Petry 7
1University of Missouri, 2Texas Tech University, 3Livestock Issues Research Unit, 4USDA-ARS, 5Livestock Issues Research Unit USDA, 6School of Veterinary Medicine, Texas Tech, 7University of Missouri, Division of Animal Science

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 2, Kevin J. Herrick 3, Melissa L. Jolly-Breithaupt 3, Crystal L. Levesque 1
1South Dakota State University, 2University of Minnesota, 3POET Bioproducts
4:20 p.m.  173  **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 L. Becker ³, Pete Wilcock ³, Amy L. Petry ⁴
¹University of Missouri, ²Iowa Select, ³AB Vista, ⁴University of Missouri, Division of Animal Science

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

**Nonruminant Nutrition VII - Nutritional Strategies Under Health Challenge**
Chair: Jorge Estrada, Carthage Veterinary Service
1:30 PM - 5:00 PM
Ballroom C

1:30 p.m.  307  **Awardee Talk: Effects of dietary valerate glycerides on weanling piglet diarrhea and immunity**
Lauren L. Kovanda ¹, Sofia Rengman ², Snehal Tawde ², Jeroen Pos ², Jungjae Park ¹, Sangwoo Park ¹, Kwangwook Kim ³, Yanhong Liu ¹
¹University of California, Davis, ²Perstorp, ³Michigan State university

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 Deng ¹, Marcos 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 R. Garavito Duarte ¹, Marcos 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, Carl 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
¹Purdue University, ²Department of Statistics, Purdue University
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 J. 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 phytotherapeutic 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 B. Grimes Francis 3, Cassidy R. Ross 1, Warren C. Rusche 1, Jeff S. Heldt 4
1South Dakota State University, 2Nutreco, 3Animal Science/ South Dakota State University, 4Selko USA

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. R. Underdahl 1, Lydia E. Hansen 1, Jessie G. Syring 1, Joshua Wianecki 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, Jessie G. Syring 1, Terry Skunberg 1, Justin Gilbertson 1, Colin T. Tobin 1, Kendall C. Swanson 2, Zachary E. Carlson 1
1North Dakota State University, 2Department of Animal Sciences, North Dakota State University

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 Fabà 1, Tetske G. Hulshof 1, G B G Balemans 1, Hubèrt M J van Hees 1
1Trouw Nutrition R&D
2:15 p.m. 217 **Weaning weight associated with improved nursery pig growth rate.**
Michelle McCallum 1, Gregory Krahn 1, Julie Mahoney 1, Rodney Hinson 1, Chris L. Eden 1
1United Animal Health

2:30 p.m. 218 **Weaning weight associated with improved performance of grow-finish pigs**
Gregory Krahn 1, Michelle McCallum 1, Julie Mahoney 1, Rodney Hinson 1, Chris L. Eden 1
1United Animal Health

2:45 p.m. 219 **Effect of stocking density on F1 Gilt grow-finish performance**
Rachel Self 1, Clara K. Henry 2, Christine Mainquist-Whingham 3, Amanda Cross 4, Ethan Stephenson 3, Brady McNeil 4
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. Harshman 1, Scott D. Carter 2, Kyle Coble 3
1Huvepharma, 2Oklahoma State University, 3JBS Live Pork

3:30 p.m. 221 **Impact of parity on stall utilization in free access stall systems**
Simon A. Collier 1, Andrea M. Luttman 1, Janice M. Siegfard 1, Catherine W. Ernst 1
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 Licuan 1, Allan P. Schinckel 1, Jamie Hundley 2, RJ Nepomuceno 3, Matt Robins 3, Randolph Crasto 3, Bradley A. Didion 4, Michael Kleve-Feld 5, Kara R. Stewart 1
1Purdue University, 2Pig Improvement Company Inc., 3Innovative Heating Technology, 4Genus PIC, 5PIC North America

**Animal Behavior, Health and Well-Being**
Chair: Kelsey Bruno-Bayliff, Oklahoma State University
2:00 PM - 5:00 PM
Hall of Ideas F/I

2:00 p.m. 205 **Detection of anemic sheep using ocular conjunctiva images and deep learning technology**
Luara Freitas 1, Rafael Ferreira 2, Anderson A. Alves 1, Joao R. R. Dórea 2, Claudia Paz 3, Guilherme J M Rosa 1
1University of Wisconsin-Madison, 2University of Wisconsin, 3Sustainable Livestock Research Center, Animal Science Institute
2:15 p.m.  Evaluation of the effect of oral administration of bivalent VHH 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.  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.  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.  Influence of litter origin on performance and tail biting in growing-finishing pigs
Courtney A. Archer 1, Adrienne Hilbrands 2, Benny E. Mote 3, Ty B. Schmidt 4, Lee J. Johnston 2, Yuzhi Li 2
1University of Minnesota, 2West Central Research and Outreach Center, University of Minnesota, 3University of Nebraska-Lincoln, 4University of Nebraska

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

3:30 p.m.  Sleeping beauties: A daily time budget for individually-housed research pigs at 6-days of age
Tawni N. Williams-Stroud 1, Ryan N. Dilger 2, Angela R. Green-Miller 1
1University of Illinois at Urbana-Champaign, 2University of Illinois Urbana-Champaign

3:45 p.m.  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.  Growth and behavior of Yorkshire gilts exhibiting physiological resilience to weaning stress
Andrea M. Luttman 1, Janice M. Siegford 1, Catherine W. Ernst 1
1Michigan State University

4:15 p.m.  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 2, Ruth Woiwode 4, Perle E. Zhitnitskiy 5, Kurt D. Vogel 2
1University of Nebraska–Lincoln; University of Wisconsin–River Falls, 2University of Wisconsin - River Falls, 3Abbyland Pork Pack, 4University of Nebraska–Lincoln, 5University 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

Nonruminant Nutrition VIII - Nursery II
Chair: Lucas Rodrigues, Zinpro Corporation
2:00 PM - 5:00 PM
Ballroom D

2:00 p.m.  186  Evaluation of the effects of a Lactobacillus postbiotic product (Lumensatm) 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, 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 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 Knoell ¹, Caroline Gonzalez Vega ¹, Maria I. Sardi ¹, Ehsan Khafipour ¹  
¹Cargill

4:00 p.m.  193  **The effects of mannann oligosaccharides on mortality and full value nursery swine**  
Jose A. Soto ¹, Henrique S. Cemin ², Morgan Hart ², Sharlie A. Hansen ², Ernie L. Hansen ²  
¹Alltech, ²Hubbard Feeds

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 L. Becker ¹, Gustavo Cordero ¹  
¹AB Vista

4:45 p.m.  69  **Effect evaluation of two sources of zinc at EU-authorized level on growth performance and gut health ofpiglets with a low or normal birth weight**  
Clara Negrini ¹, Diana Luise ¹, Federico Correa ¹, Sara Virdis ¹, Agathe Roméo ², Alessandra MONTEIRO ³, Paolo Trevisi ¹  
¹University of Bologna, ²Animine Precision Minerals, ³ANIMINE

**Physiology**  
Chair: Kolapo Ajuwon, Purdue University  
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 ¹, Jamie Hundley ², RJ Nepomuceno ³, Matt Robins ³, Randolph Crasto ³, Bradly A. Didion ⁴, Michael Kleve-Feld ⁵, Kara R. Stewart ¹  
¹Purdue University, ²Pig Improvement Company Inc., ³Innovative Heating Technology, ⁴Genus PIC, ⁵PIC 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 2, Marie-France Palin 2, Candido Pomar 1
1AAFC, 2Agriculture 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 2, David M. Grieger 2, Karol E. Fike 2
1DNA Genetics / Pillen Family Farms, 2Kansas 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. 242 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 2, Jana L. Reynolds 1, Kirsten A. Midkiff 1, Charles R. Looney 1, Wyatt E. Weber 1
1University of Arkansas, 2University of Arkansas System, Division of Agriculture, Department of Animal Science

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 2, Steven L. Terlouw 3, Brad S. Garrison 3, David M. Grieger 2, Jason C. Woodworth 2, Kara R. Stewart 4, Karol E. Fike 2
1DNA Genetics / Pillen Family Farms, 2Kansas State University, 3DNA Genetics, 4Purdue University

Nonruminant Nutrition IX - Zinc and Copper
Chair: Morgan Hart, Hubbard Feeds
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. DeRouche 1, Jordan T. Gebhardt 1, Robert D. Goodband 1, Jason C. Woodworth 1, Mike D. Tokach 1
1Kansas State University, 2Universität Berlin, 3ANIMINE
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 3, Lee J. Johnston 4, Wesley Schweer 5, Lucas Rodrigues 5
1University of Minnesota, 2University of Minnesota College of Food, Agricultural and Natural Resource Sciences, 3University of Minnesota College of Veterinary Medicine, 4West Central Research and Outreach Center, University of Minnesota, 5Zinpro 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 Hart 2, Sharlie A. Hansen 2, Ernie L. Hansen 2
1Alltech, 2Hubbard Feeds

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 Kwon 1, Steve J. England 1, Greg Hartsook 1, Pornpim Aparachita 1, Kevin Soltwedel 1, Robert Fischer 1, Fredrik Sandberg 1
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 Hugo Moita 1, Jordi Camp 1, Carine M. Vier 1, Wayne R. Cast 1, Steve Dritz 1, Luis E. Zaragoza 1, Danielle Wilson-Wells 1, Ning Lu 1, Weasley A. Orlando 1, Jose Landero 2, Malachy Young 2
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 Schweer 1, Alyssa S. Cornelison 1, Mike Socha 1, Todd E. Williams 2, Lucas Rodrigues 1
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 Rodrigues 1, Alyssa S. Cornellison 1, Wesley Schweer 1, Ton Kramer 1, Stefan Langer 1, Mike Socha 1, Rhuan F. Chaves 2, Vinicius Cantarelli 2
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 Marchetti 1, Raffaella Rebucci 1, Paola Cremonesi 2, Bianca Castiglioni 2, Filippo Biscarini 2, Yron Joseph Y. Manaig 3, Valentino Bontempo 1
1Università degli Studi di Milano, 2Institute of Agricultural Biology and Biotechnology (IBBA-CNR), 3Animine Precision Minerals
Teaching and Extension Education
Chair: Krista Eiseman, University of Wisconsin-Platteville
4:15 PM - 4:30 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 Murphy 1, Emily Cornwell 2
1American Veterinary Medical Association, 2Food and Drug Administration Center for Veterinary Medicine

Wednesday, March 13, 2024

Ruminant Nutrition IV
Chair: Kendall Swanson, North Dakota State University
8:00 AM - 9:45 AM
Hall of Ideas F/I

8:00 a.m. 294 Development of a model to predict forage intake and growth of bottle-fed Holstein calves
Phillip A. Lancaster 1, Geovana C. Baldin 1, Caleb Hildebrand 1, Robert Larson 1
1Beef Cattle Institute, Kansas State University

8:15 a.m. 295 Development of a model to predict forage intake and growth of nursing beef calves
Phillip A. Lancaster 1, Geovana C. Baldin 1, Caleb Hildebrand 1, Robert Larson 1
1Beef Cattle Institute, Kansas State University

8:30 a.m. 296 Effects of dietary antimicrobials on the ruminant gastrointestinal tract microbiome
Tyler J. Vincent 1, Lester Nolasco 1, Chaichana Suriyapha 2, Timothy A. Johnson 1, Jon P. Schoonmaker 1
1Purdue University, 2Khon Kaen University

8:45 a.m. 297 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. 298 Impact of ruminal acidosis on cattle energy metabolism
Haley F. Linder 1, Jiangong Li 1, Larry L. Berger 2, Angela R. Green-Miller 2, Joshua C. McCann 1
1University of Illinois Urbana-Champaign, 2University of Illinois at Urbana-Champaign

9:15 a.m. 306 Awardee Talk: Characterization and surveillance testing of problematic pathogens within the livestock industry using metagenomic and long read sequencing
Alison C. Neujahr 1
1University of Nebraska–Lincoln
Nonruminant Nutrition X - Grow-Finish II
Chair: Shannon Dierking, CSA Animal Nutrition
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. 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

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. Miller 1, Omarh F. Mendoza 2, Chris Sparks 1, Nicholas K. Gabler 1
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. 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

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. McCormack 1, Ramon Muns 2, Christina Mulvenna 3, Maria C Walsh 1, Laurent Roger 1, Estefania Perez Calvo 1
1dsf-firmenich, 2AFBI, 3Agri-food and Biosciences Institute

9:00 a.m. 250 Effects of premix carriers rich in iron, calcium, or fiber on growth performance of early-growing pigs
Liangkai Cheng 1, Xule Liu 2, Apichat Wantanasak 3, Tingting Ju 4, Gary Stoner 5, Apichat Wantanasak 5, JIYAO GUO 2, Xiao Xu 1
1Wuhan Polytechnic University, 2CP Group China, 3CP INVESTMENT CO. LTD, 4University of Alberta, 5CP Group

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 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, Manuel S. Hernandez 2, Rand R. Broadway 3, Nicole C. Burdick Sanchez 4, Jeff A. Carroll 5, Amy L. Petry 6
1University of Missouri, 2Texas Tech University, 3Livestock Issues Research Unit, 4USDA-ARS, 5Livestock Issues Research Unit USDA, 6University of Missouri, Division of Animal Science

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 1, Robert C. Thaler 1, Keith Underwood 1, Erin S. Beyer 2, Jorge Y. Perez-Palencia 1
1South Dakota State University, 2North Dakota State University

Nonruminant Nutrition XII - Nursery III
Chair: Jamil Faccin, Kansas State University
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 B. 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 N. 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 Hart 1, Sharlie A. Hansen 1, Jose A. Soto 2, Ernie L. Hansen 1  
1Hubbard Feeds, 2Alltech

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 3  
1dsf-firmenich, 2Gowans Feed Consulting, 3dsf-firmenich, Animal Nutrition & Health

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 1, Hubèrt M J van Hees 1, Tetske G. Hulshof 1  
1Trouw Nutrition R&D
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 1  
1South Dakota State University, 2University of Kentucky

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, Chris P A van de Ligt 3, Emma H. Wall 4, Lee J. Johnston 5  
1Department of Animal Science, University of Minnesota, 2University of Minnesota, 3Selko USA, 4Nutreco, 5West Central Research and Outreach Center, University of Minnesota

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 2, Simon Tibble 1  
1AB Neo, 2AB Neo, AB Agri Ltd

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 2, Hayford Manu 1, Andres Gomez 1, Cesar Ocazio 3, Ignacio R. Ipharragueurre 4, Pedro E. Urriola 5  
1University of Minnesota, 2West Central Research and Outreach Center, University of Minnesota, 3BioZyme Inc, 4Institute of Human Nutrition and Food Science, University of Kiel, 5University of Minnesota College of Food, Agricultural and Natural Resource Sciences
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. María 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 A. 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 A. 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

Swine Translational II: Applied Nutrition & Health
Chair: David Rosero, Iowa State University
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 2, Ally ford 1, Emma Zaicow 1, Kara R. Stewart 1, Brian T. Richert 1
1Purdue University, 2University of Missouri

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 2, 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, 2University of Missouri

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 1, Allan P. Schinckel 1, Radiah C. Minor 2
1Purdue University, 2North Carolina A&T State University

8:45 a.m.  288  Effects of increasing water concentrations of oregano essential oil supplementation for lactating sows
Alexandra Fisk 1, Alicia N. 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, 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 2, Ryan S. Samuel 1, Crystal L. Levesque 1, Autumn Kramer 1, Robert C. Thaler 1
1South Dakota State University, 2University of Minnesota

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. Alambarrio 1, Siara Zedonek 1
1University of Georgia, 2Kansas state university, 3Puretein Bioscience LLC

10:30 a.m. 308 Awardee Talk: Prevention and mitigation of pathogens in feed and feed manufacturing systems
Olivia Harrison 1, Jason C. Woodworth 1, Chad B. Paulk 2, Jordan T. Gebhardt 1, Cassandra K. Jones 1
1Kansas State University, 2Kansas state university

Nonruminant Nutrition XI - Calcium and Phosphorus
Chair: Qiong Hu, Cargill; Caroline Gonzalez-Vega, Cargill
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 1
1University of Wisconsin-Madison, 2University of Wisconsin-Madison
8:30 a.m.  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.  Estimating bone mineral replenishment following phosphorus deficiency in growing pigs
Grace C. McKibben ¹, Gustavo Cordero ², Gilson A. Gomes ², Spencer L. Becker ², Peter Wilcock ², Nicholas K. Gabler ¹
¹Iowa State University, ²AB Vista

9:15 a.m.  Nutritional strategies allowing inorganic phosphates reduction in maintaining maximum growth performance and bone mineralisation in piglets
Xavière Rousseau ¹, Tristan BREHELIN ², Cécile Rougier-Borne ³, Gustavo Cordero ¹
¹AB Vista, ²Techna France Nutrition, ³Techna

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

9:45 a.m.  Effect of very low calcium diet supplemented with microbial phytase in post-weaning piglets
Marie-Pierre Létourneau Montminy ¹, Marllon De Oliveira ²
¹Université Laval, ²UNESP

10:00 a.m.  Effect of different doses of phytase (HiPhoriusTM) 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.  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.  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, Jérôme Lapointe ¹
¹Agriculture and Agri-Food Canada, ²Laval University

10:45 a.m.  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 Hart 1, Sharlie A. Hansen 1, Jose A. Soto 2, Ernie L. Hansen 1
1Hubbard Feeds, 2Alltech

Pork Quality Symposium
Chair: Bailey Harsh, University of Illinois Urbana-Champaign
8:00 AM - 2:00 PM
Ballroom B

8:00 a.m. Pork Quality Symposium Introduction

8:10 a.m. The Economic Situation of the Pork Loin: Economic overview of the myriad factors affecting pork loin value
Glynn Tonsor 1
1Kansas State University

8:30 a.m. The Pork Demand Situation: Consumer data and insights on pork loin purchasing and use patterns
David Newman 1, Mia Newman 1
1National Pork Board

9:15 a.m. Consumer Perception of Pork Loin Palatability
Rhonda K. Miller 1, Anna C. Dilger 2
1Texas A&M University, 2University of Illinois Urbana-Champaign

10:00 a.m. Pork Quality Symposium Discussion
Collette Kaster 1
1American Meat Science Association (AMSA) and Professional Animal Auditor Certification Organization

10:15 a.m. Pork Quality Symposium Break

10:30 a.m. How Has the Pork Loin Changed: Changes in muscle biology of the pork loin
Elisabeth Huff-Lonergan 1
1Iowa State University

11:00 a.m. Pork Benchmarking Survey: How do changes over time in retail pork loin products relate to consumer needs
Chad Carr 1, David Newman 2
1University of Florida, 2National Pork Board

11:30 a.m. Nutritional Value of Pork: Fat flavor research and communication strategies about the nutritional value of pork loin
Kristin Hicks-Roof 1
1National Pork Board
12:00 p.m.  Pork Quality Symposium Lunch and Discussion

12:45 p.m.  Moderated Discussion: Top scientific questions to be answered about the pork loin and top research needs
Collette Kaster
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1American Meat Science Association (AMSA) and Professional Animal Auditor Certification Organization