

Monday, March 11, 2019

Breeding and Genetics Symposium: FAANG

Chair:

8:30 AM - 11:45 AM

202

8:30 a.m. **Breeding and Genetics Symposium: FAANG Introduction**

8:35 a.m. **Introduction to Functional Annotation of Animal Genomes Consortium**

Elisabetta Giuffra¹, Christopher K. Tuggle²

¹INRA - laboratory of Animal Genetics and Integrative Biology, ²Dept. of Animal Science, Iowa State University

9:10 a.m. **Brenda Murdoch Talk**

9:45 a.m. **Breeding and Genetics Symposium: FAANG Break**

10:00 a.m. **Functional annotation of livestock genomes: chromatin structure and regulation of gene expression**

Herve Acloque¹, Sarah Djebali², Sylvain Foissac³, Elisabetta Giuffra⁴, Sandrine Lagarrigue⁵, Kylie Munyard⁶, Andrea Rau⁷, Nathalie Vialaneix⁸

^{1, 2}Université de Toulouse, INRA, INPT, ENVT, ³GenPhySE, Université de Toulouse, INRA, INPT, ENVT, ⁴INRA - laboratory of Animal Genetics and Integrative Biology, ^{5, 6}Curtin University, ⁷INRA, Université Paris Saclay, ⁸Université de Toulouse, INRA

10:35 a.m. **Gota Morota Talk**

11:10 a.m. **Building a functional annotation of the equine genome**

Douglas F. Antczak¹, Rebecca R. Bellone², Erin N. Burns³, Catherine Creppe⁴, Carrie J. Finno⁵, Ted Kalbfleisch⁶, Nicole B. Kingsley⁷, James N. MacLeod⁸, Donald C. Miller⁹, Jessica L. Petersen¹⁰

¹Cornell University, ²University of California-Davis, ³University of California-Davis, ⁴Diagenode, ⁵University of California-Davis, ⁶University of Kentucky, ⁷University of California-Davis, ⁸University of Kentucky, ⁹Cornell University, ¹⁰University of Nebraska-Lincoln

Gary Allee Symposium

Chair:

9:00 AM - 12:00 PM

Grand Ballroom South

9:00 a.m. **Gary Allee Symposium Introduction**

9:05 a.m. **Building a production nutrition department in an integrated production company: critical pillars for our success.**

Kyle F. Coble¹

¹JBS Live Pork

9:40 a.m. **Observations on pre-weaning piglet mortality**

Naomi Cooper¹, Michael Ellis², Caleb M. Shull³, Katherine D. Vande Pol⁴

¹University of Illinois, ²University of Illinois, ³The Maschhoffs, ⁴University of Illinois

10:15 a.m. **Gary Allee Symposium Break**

10:30 a.m. **Feed, feeding levels, and tissue analytics of Vitamins: Observations from the field**

Matthew Ackerman¹, Buddy Hinson², Rodger Main³, Ronny Moser⁴

¹Pork Veterinary Solutions, ²United Animal Health, ³Iowa State University, ⁴United Animal Health

11:05 a.m. **Impact of weaning stress, disease, and diet on pig performance, intestinal function and integrity**

Carson De Mille¹, Nicholas K. Gabler², Emma T. Helm³

¹Iowa State University, ²Department of Animal Science, College of Agriculture and Life Sciences, Iowa State University, ³Iowa State University

11:40 a.m. **Gary Allee Symposium Panel**

Digestive Physiology of Pigs Lecture and Lunch

Chair:

12:00 PM - 1:00 PM

Grand Ballroom North

12:00 p.m. **Lipid Nutrition and gut health of pigs**

Charlotte Lauridsen¹

¹Aarhus University

Poster Session I

12:45 PM - 1:30 PM

CenturyLink Grand Ballroom Foyer

12:45 p.m. **A 16S rDNA reference database of the deep-nasopharynx in steers for bacterial community analysis of cattle with bovine respiratory disease complex**

Madison T. Henniger¹, John W. Keele², Larry A. Kuehn³, Tara G. McDanel⁴, Phillip R.

Myer⁵, Timothy P.L. Smith⁶

¹University of Tennessee, ²USDA-ARS, U.S. Meat Animal Research Center, ³USDA-ARS, U.S. Meat Animal Research Center, ⁴USDA-ARS, U.S. Meat Animal Research Center, ⁵University of Tennessee, ⁶USDA-ARS, U.S. Meat Animal Research Center

12:45 p.m. **Amino acid profile of GuarPro F-81, a potential protein source for swine and other agricultural animals in the United States**

James Brett¹, Mark A. Crenshaw², M. Shamimul Hasan³, Rebecca M. Humphrey⁴,

Shengfa F. Liao⁵, Alexandra G. McCafferty⁶, Brian J. Rude⁷

¹Department of Veterinary Pathobiology & Population Medicine, Mississippi State

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

University, ³Department of Animal & Dairy Sciences, Mississippi State

University, ⁴Department of Animal & Dairy Sciences, Mississippi State University, ⁵Dept of

Animal & Dairy Sciences, Mississippi State University, ⁶Department of Animal & Dairy

Sciences, Mississippi State University, ⁷Department of Animal & Dairy Sciences, Mississippi

State University

12:45 p.m. **Anti-inflammatory treatment modifies epigenetics changes to muscle tissue caused by altered nutrient demand in early lactation dairy cows**

Barry J. Bradford ¹, Carrie E. Cromer ², Miriam Garcia ³, Laman K. Mamedova ⁴, Caroline M. Ylioja ⁵

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University

12:45 p.m. **Bovine chromosome 19 VDR and GPRC5C genotypes are associated with udder conformation traits in crossbred beef cattle**

Carl R. Dahlen ¹, Lauren L. Hulsman Hanna ², Claudia L. May ³, Kris A. Ringwall ⁴, Kendall C. Swanson ⁵, Alison K. Ward ⁶

¹Department of Animal Sciences, North Dakota State University, ²Department of Animal Sciences, North Dakota State University, ³Department of Animal Sciences, North Dakota State University, ⁴Dickinson Research Extension Center, North Dakota State University, ⁵Department of Animal Sciences, North Dakota State University, ⁶Department of Animal Sciences, North Dakota State University

12:45 p.m. **Comparison of analgesics for control of lameness-associated pain in lactating dairy cattle.**

Johann Coetzee ¹, Patrick Gorden ², Michael Kleinhenz ³, Jennifer Schleinig ⁴, Rochelle Warner ⁵, Larry Wulf ⁶, Joshua Ydstie ⁷

¹Kansas State University College of Veterinary Medicine, ²Iowa State University College of Veterinary Medicine, ³Kansas State University College of Veterinary Medicine, ⁴Texas A&M College of Veterinary Medicine, ⁵Iowa State University College of Veterinary Medicine, ⁶Iowa State University College of Veterinary Medicine, ⁷Iowa State University College of Veterinary Medicine

12:45 p.m. **Development of Local Kansas E. coli UTI Antibiograms to Improve Antimicrobial Stewardship in Companion Animal Medicine**

Katherine KuKanich ¹, Brian Lubbers ², Brianna Salgado ³

¹Kansas State University, ²Kansas State University, ³Kansas State University

12:45 p.m. **Effects of fat-soluble vitamin injection on plasma and tissue vitamin concentrations in nursery pigs**

Carli Boston-Denton ¹, Paige Isensee ², Young Dal Jang ³, Paige Kelley ⁴, Kirsten Rinholen ⁵, Mikayla Rotering ⁶, Robert Stuart ⁷

¹University of Wisconsin River Falls, ²University of Wisconsin River Falls, ³University of Wisconsin River Falls, ⁴University of Wisconsin River Falls, ⁵University of Wisconsin River Falls, ⁶University of Wisconsin River Falls, ⁷Stuart Products Inc.

12:45 p.m. **Effects of management system on heifer growth performance and fescue toxicity**

Parker A. Henley ¹, Frank A. Ireland ², Joshua C. McCann ³, Laura C. Olander ⁴, Daniel W. Shike ⁵

¹University of Illinois, ²University of Illinois, ³University of Illinois, ⁴University of Illinois, ⁵University of Illinois

12:45 p.m. **Effects of supplementing polyunsaturated fatty acids during late gestation on performance of fall-calving cows**

Trenton L. Black ¹, Frank A. Ireland ², Joshua C. McCann ³, Taoqi Shao ⁴, Daniel W. Shike ⁵

¹University of Illinois, ²University of Illinois, ³University of Illinois, ⁴University of Illinois, ⁵University of Illinois

12:45 p.m. **Factors affecting circulating metabolites and postnatal growth in spring-born neonatal beef calves**

Claiborn M. Bronkhorst¹, Allison M. Meyer², Amy E. Radunz³, Emma L. Stephenson⁴, Lindsey G. Wichman⁵, Ronna J. Wook⁶

¹University of Wisconsin-River Falls, ²University of Missouri, ³University of Wisconsin-River Falls, ⁴University of Missouri, ⁵University of Wisconsin-River Falls, ⁶University of Wisconsin-River Falls

12:45 p.m. **Heat stress mitigation strategies used by Midwestern cattle feeders**

Ethan J. Blom¹, Joseph P. Cassady², Alfredo DiCostanzo³, Galen E. Erickson⁴, Wesley W. Gentry⁵, Larry Howard⁶, Robbi H. Pritchard⁷, Warren C. Rusche⁸, Allison VanDerWal⁹, Thomas M. Winders¹⁰

¹South Dakota State University, ²South Dakota State University, ³University of Minnesota, ⁴Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,, ⁵South Dakota State University, ⁶University of Nebraska - Lincoln, ⁷Annawan Cattle, ⁸South Dakota State University, ⁹University of Minnesota, ¹⁰University of Nebraska-Lincoln

12:45 p.m. **Impact of an extended-release dewormer on rumen VFAs and blood metabolites**

Emmalee J. Northrop¹, Stephanie D. Perkins², George A. Perry³, Jerica J.J. Rich⁴, Julie A. Walker⁵

¹Department of Animal Science, South Dakota State University, ²Department of Animal Science, South Dakota State University, ³Department of Animal Science, South Dakota State University, ⁴Department of Animal Science, South Dakota State University, ⁵Department of Animal Science, South Dakota State University

12:45 p.m. **Impact of protein or chloride source on Boer goat carcass characteristics**

Alison Crane¹, Cassandra K. Jones², James Lattimer³, Madeline Neufeld⁴, Rachel Sorensen⁵

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University

12:45 p.m. **Impact of protein or chloride source on Boer goat growth performance**

Alison Crane¹, Cassandra K. Jones², James Lattimer³, Ashley L. Royce⁴, Rachel Sorensen⁵

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University

12:45 p.m. **Injectable Trace Minerals (Selenium, Copper, Zinc, and Manganese) on Milk Yield Performance After an Aflatoxin Challenge in Multiparous Holstein Cows**

Juliette Nye¹

¹University of Illinois at Urbana Champaign

12:45 p.m. **Management and Risk of Nitrate Toxicity in Annual Forages: Results of a Beef Cattle Producer Survey**

Mary E. Drewnoski¹, Jaymelynn K. Farney², Mary E. Lenz³

¹University of Nebraska- Lincoln, ²Kansas State University Southeast Research and Extension Center, ³University of Nebraska- Lincoln

12:45 p.m. **Performance and carcass characteristics of finishing beef heifers managed in a bedded hoop barn versus an open feedlot in Central Missouri**

Chris L. Boeckmann¹, James D. Caldwell², Eric G. Groose³, Matt J. Kramer⁴, Heather R. Luebbering⁵, Jeremia J. Markway⁶, Doug Moeller⁷, George R. Pettig⁸, Bruce C. Shanks⁹, Luke S. Wilbers¹⁰

¹Lincoln University, ²Delacon, ³Lincoln University, ⁴Lincoln University, ⁵Lincoln University, ⁶Lincoln University, ⁷Lincoln University, ⁸Lincoln University, ⁹Lincoln University, ¹⁰Lincoln University

12:45 p.m. **Performance, carcass characteristics, and biological parameters by sheep offered diets with and without Actifor® Power**

Kevin Adams ¹, James D. Caldwell ², Rebecca Jacquin ³, Bruce C. Shanks ⁴
¹Delacon, ²Delacon, ³Lincoln University, ⁴Lincoln University

12:45 p.m. **Prevalence and distribution of Senecavirus A in United States swine feed mills**

Shania Davis ¹, Steve S. Dritz ², Cassandra K. Jones ³, Shannon P. Ney ⁴, Megan C. Niederwerder ⁵, Vlad Petrovan ⁶, Bob Rowland ⁷, Savannah C. Stewart ⁸, Valentina Trinetta ⁹, Jason C. Woodworth ¹⁰, Jason C. Woodworth ¹¹
¹Kansas State University, ²Kansas State University, ³Kansas State University, Manhattan, ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University, ⁸Kansas State University, ⁹Kansas State University, ¹⁰Kansas State University, ¹¹Kansas State University

12:45 p.m. **Relationship between passage rate and in vitro methane production from rumen and fecal contents**

Angela R. Green-Miller ¹, Darren D. Henry ², Thomas G. Jennings ³, Joshua C. McCann ⁴, Corina Nunez ⁵, Justin W. Rickard ⁶, Daniel W. Shike ⁷, Sara M. Tondini ⁸
¹University of Illinois, ²Texas Tech University, ³Texas Tech University, ⁴University of Illinois, ⁵Illinois State University, ⁶Illinois State University, ⁷University of Illinois, ⁸University of Illinois

12:45 p.m. **Relationships of neonatal beef calf vigor with metabolic status**

Claiborn M. Bronkhorst ¹, Allison M. Meyer ², Amy E. Radunz ³, Emma L. Stephenson ⁴, Lindsey G. Wichman ⁵, Ronna J. Wook ⁶
¹University of Wisconsin-River Falls, ²University of Missouri, ³University of Wisconsin-River Falls, ⁴University of Missouri, ⁵University of Wisconsin-River Falls, ⁶University of Wisconsin-River Falls

12:45 p.m. **Sow parity structure and body condition measurements throughout lactation and relationship to piglet growth.**

Miguel A. Cervantes ¹, Michelle R. Garcia ², Brittney N. Keel ³, William T. Oliver ⁴, Lea A. Rempel ⁵, James E. Wells ⁶
¹Texas A&M University Kingsville, ²Texas A&M University Kingsville, ³USDA, ARS, USMARC, ⁴USDA, ARS, USMARC, ⁵USDA, ARS, USMARC, ⁶USDA, ARS, USMARC

12:45 p.m. **The effects of cyanidin supplementation during oocyte maturation on the in vitro production of pig embryos**

Emma Hicks ¹, Miranda Mentler ², Brian D. Whitaker ³
¹University of Findlay, ²University of Findlay, ³University of Findlay

12:45 p.m. **The effects of kuromanin supplementation during oocyte maturation on the in vitro production of pig embryos**

Emma Hicks ¹, Miranda Mentler ², Brian D. Whitaker ³
¹University of Findlay, ²University of Findlay, ³University of Findlay

12:45 p.m. **Validation of environmental swabbing to detect Senecavirus A in feed**

Shania K. Davis ¹, Steve Dritz ², Cassandra K. Jones ³, Megan C. Niederwerder ⁴, Vlad Petrovan ⁵, Robert Rowland ⁶, Clayton A. Sardella ⁷, Savannah C. Stewart ⁸, Jason C. Woodworth ⁹

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University, ⁸Kansas State University, ⁹Kansas State University

David Baker Symposium

Chair:

1:00 PM - 4:35 PM

Grand Ballroom South

1:00 p.m. **David Baker Symposium Introduction**

1:05 p.m. **Amino Acids in Livestock: A Historical Perspective**

R. Dean Boyd ¹, Keith D. Haydon ²

¹The Hanor Company, LLC, ²CJ America-Bio, Downers Grove, IL

1:45 p.m. **How far we could go reducing crude protein with the use of supplemental amino acids**

Candido Pomar ¹

¹Agriculture and Agri-Food Canada

2:30 p.m. **Meta-regression analysis to predict the influence of branched-chain and large neutral amino acids on growth performance of pigs**

Henrique S. Cemin ¹, Joel M. DeRouchey ², Steve S. Dritz ³, Robert D. Goodband ⁴, Mike D. Tokach ⁵, Jason C. Woodworth ⁶

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University

2:55 p.m. **David Baker Symposium Break**

3:10 p.m. **Commercial Realities of Amino Acid Nutrition in the Young Pig**

David A. Cook ¹, Brooke Humphrey ², Chad Pilcher ³

¹Cargill, Inc, ²Cargill Premix & Nutrition, ³Cargill Premix & Nutrition

3:50 p.m. **Opportunity with functional role of supplemental amino acids**

Sung Woo Kim ¹, Yanbin Shen ²

¹North Carolina State University, ²Nutelligence, Inc

4:30 p.m. **David Baker Symposium Closing Remarks**

Ruminant Nutrition: General

Chair:

1:45 PM - 3:15 PM

205/206

1:45 p.m. **Regulation of Immune Signaling by Extracellular Vesicles**

Barry J. Bradford ¹, Laman K. Mamedova ², Caroline M. Ylloja ³

¹Kansas State University, ²Kansas State University, ³Kansas State University

2:15 p.m. **Modeling repeated measurements of diet composition**

Kent M. Eskridge ¹, Ronald M. Lewis ², Napoleon Vargas Jurado ³

¹Statistics Department, University of Nebraska - Lincoln, ²Animal Science Department, University of Nebraska - Lincoln, ³Animals Science / Statistics Departments, University of Nebraska - Lincoln

2:30 p.m. **Characterization of the rumen bacterial communities of bison heifers maintained on a pasture-based diet**

Anlly Miley. Fresno Rueda ¹, Jason Griffin ², Carter Kruse ³, Benoit St- Pierre ⁴

¹South Dakota State University, ²South Dakota State University, ³Turner Enterprises (Standing Butte Ranch), ⁴South Dakota State University

2:45 p.m. **Identification and Genomic Characterization of two Novel Strains of Prevotella albensis as starch utilizers in the rumen of beef cows**

Venkata Bandrupalli ¹, Benoit St- Pierre ²

¹Department of Animal Science, South Dakota State University, ²South Dakota State University

3:00 p.m. **Economic Comparison of March and May Calving Systems in the Nebraska Sandhills**

Devin L. Broadhead ¹, McKay Erickson ², Rick N. Funston ³, Jackie A. Musgrave ⁴, Matt Stockton ⁵

¹University of Nebraska-Lincoln, West Central Research and Extension Center, ²University of Nebraska Lincoln, ³University of Nebraska-Lincoln, West Central Research and Extension Center, ⁴University of Nebraska-Lincoln, West Central Research and Extension Center, ⁵University of Nebraska-Lincoln, West Central Research and Extension Center

Graduate Student Oral Competition: MS

Chair:

1:45 PM - 4:50 PM

201

1:45 p.m. **Graduate Student Oral Competition: MS Introduction**

1:50 p.m. **Assessment of allometric changes of visceral organs in pigs from birth to 10 kg bodyweight at 14 days post-weaning**

Sarah K. Elefson ¹, Merlin D. Lindemann ², James C. Matthews ³, H. J. Monegue ⁴

¹University of Kentucky, ²University of Kentucky, ³University of Kentucky, ⁴University of Kentucky

2:05 p.m. **Effects of copper, zinc, and manganese intake in late gestation on milk, cow plasma, and calf plasma trace mineral concentrations post-calving in beef cattle**

Allison M. Meyer ¹, Abigail R. Rathert ², Emma L. Stephenson ³, Heather Tucker ⁴

¹University of Missouri, ²University of Missouri, ³University of Missouri, ⁴Novus International

2:20 p.m. **Effects of replacing monensin and tylosin in finishing cattle diets with essential oils and/or benzoic acid on growth performance and carcass characteristics**

Benjamin M. Bohrer ¹, Ira B. Mandell ², Lydia M. Wang ³

¹University of Guelph, ²University of Guelph, ³University of Guelph

2:35 p.m. **Effects of vegetable and animal protein sources and nutrient specifications on the nursery pig gut microbiome**

S. K. Baidoo ¹, Chloe M. Creager ², Andres Gomez ³, Hayford Manu ⁴, Ashok Sharma ⁵
¹University of Minnesota, ²University of Minnesota, ³University of Minnesota, ⁴University of Minnesota, ⁵University of Minnesota

2:50 p.m. **Low allergenic full fat soybean as a suitable replacement for fishmeal in weaned pig diets**

Crystal L. Levesque ¹, Ryan S. Samuel ², Robert C. Thaler ³, Tofuko A. Woyengo ⁴, Katelyn M. Zeamer ⁵

¹South Dakota State University, ²South Dakota State University, ³South Dakota State University, ⁴South Dakota State University, ⁵South Dakota State University

3:05 p.m. **Graduate Student Oral Competition: MS Break**

3:20 p.m. **Effects of dietary soy isoflavone supplementation on carcass cutability and meat quality of pigs infected with porcine reproductive and respiratory virus**

Dustin D. Boler ¹, Erin Bryan ², Anna C. Dilger ³, Ryan Dilger ⁴, Lauren T. Honegger ⁵, Brooke N. Smith ⁶

¹University of Illinois Urbana-Champaign, ²University of Illinois, ³University of Illinois Urbana-Champaign, ⁴University of Illinois at Urbana-Champaign, ⁵University of Illinois Urbana-Champaign, ⁶University of Illinois at Urbana-Champaign

3:35 p.m. **Determining the effects of tryptophan biomass on growth performance of 11 to 23 kg nursery pigs**

Joel M. DeRouchey ¹, Steve S. Dritz ², Robert D. Goodband ³, Keith D. Haydon ⁴, Mike D. Tokach ⁵, Madison R. Wensley ⁶, Jason C. Woodworth ⁷

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴CJ America-Bio, Downers Grove, IL, ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University

3:50 p.m. **Impact of Myoglobin Oxygenation State at Freezing on Color Stability of Frozen and Thawed Beef**

Nicolas Bland ¹, Chris Calkins ², Kellen Hart ³, Morgan Henriott ⁴, Nicolas Herrera ⁵, Felipe Ribeiro ⁶

¹University of Nebraska, ²University of Nebraska, ³University of Nebraska, ⁴University of Nebraska, ⁵University of Nebraska, ⁶University of Nebraska

4:05 p.m. **Use of aspirin to intentionally induce gastrointestinal tract barrier dysfunction in feedlot cattle**

Kristen M. Brennan ¹, Nathan G. Briggs ², Griffin Nicholls ³, Jon P. Schoonmaker ⁴

¹Alltech, ²Purdue University, ³Department of Animal Sciences, Purdue University, ⁴Department of Animal Sciences, Purdue University

4:20 p.m. **Responses to alfalfa supplementation in mice**

Justin Anast ¹, Elizabeth A. Bobeck ², Krysten Fries-Craft ³, Stephan Schmitz-Esser ⁴

¹Iowa State University, ²Iowa State University, ³Iowa State University, ⁴Iowa State University

4:35 p.m. **Seeing the whole picture: Utilizing GPS technology to determine distance and time calves devote to walking post-weaning**

Kirsten Nickles ¹, Anthony Parker ², Alejandro E. Relling ³

¹The Ohio State University, ²The Ohio State University, ³Department of Animal Sciences, The Ohio State University

Undergraduate Student Oral Competition II

Chair:

2:00 PM - 3:50 PM

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2:00 p.m. **Undergraduate Student Oral Competition II Introduction**

2:05 p.m. **Effects of average temperature, wind speed, and solar radiation on daily water intake of beef bulls in winter and early spring in Eastern South Dakota**

Dorothea Clark ¹, Michael Gonda ², Cody Wright ³

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

2:20 p.m. **Effect of rumen fluid collection methodology on extent and variance of in vitro dry matter disappearance and interaction with substrate and incubation time**

Joshua C. McCann ¹, Emma L. Riets ², Daniel W. Shike ³, Sara M. Tondini ⁴

¹University of Illinois, ²Southern Illinois University at Carbondale, ³University of Illinois, ⁴University of Illinois

2:35 p.m. **Evaluation of parasite resistance in cattle treated with extended-release eprinomectin (LongRange)**

Cody R. Dawson ¹, Frank A. Ireland ², Joshua C. McCann ³, Daniel W. Shike ⁴, Keela M. Trennepohl ⁵, Mareah J. Volk ⁶

¹Western Illinois University, ²University of Illinois, ³University of Illinois, ⁴University of Illinois, ⁵Western Illinois University, ⁶University of Illinois

2:50 p.m. **Organic versus conventional grain on placental factors in caprine**

Bailey Armentrout-Shoaf ¹, Isabella V. Panetta ², Christina Rocco ³, Matthew J. Soyland ⁴, Toree Williams ⁵

¹The University of Findlay, ²The University of Findlay, ³The University of Findlay, ⁴The University of Findlay, ⁵The University of Findlay

3:05 p.m. **Impact of an extended-release dewormer on fetal development and subsequent calf performance**

Emmalee J. Northrop ¹, Stephanie D. Perkins ², George A. Perry ³, Ashley M. Reiner ⁴, Jerica J.J. Rich ⁵

¹Department of Animal Science, South Dakota State University, ²Department of Animal Science, South Dakota State University, ³Department of Animal Science, South Dakota State University, ⁴Department of Animal Science, South Dakota State University, ⁵Department of Animal Science, South Dakota State University

3:20 p.m. **Predicting Nitrogen and Phosphorous Flows in Beef Open Lots**

Galen E. Erickson ¹, Megan Homolka ², Richard Koelsch ³

¹Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,, ²UNIV OF NEBRASKA - LINCOLN, ³University of Nebraska-Lincoln

3:35 p.m. **Effects of organic versus conventional diets on dystocia rates in Nubian dams**

Bailey Armentrout-Shoaf ¹, Isabella V. Panetta ², Christina Rocco ³, Matthew J. Soyland ⁴, Toree Williams ⁵

¹The University of Findlay, ²The University of Findlay, ³The University of Findlay, ⁴The University of Findlay, ⁵The University of Findlay

Undergraduate Student Oral Competition I

Chair:

2:00 PM - 4:05 PM

211/212

2:00 p.m. **Undergraduate Student Oral Competition I Introduction**

2:05 p.m. **Effect of housing beef cows on dry lots vs pasture on cow performance and reproduction**

Wesley P. Chapple ¹, Ashley E. Cooney ², Joshua C. McCann ³, William T. Meter ⁴, Lucas T. Neira ⁵, Daniel W. Shike ⁶

¹University of Illinois, ²University of Illinois, ³University of Illinois, ⁴University of Illinois, ⁵University of Illinois, ⁶University of Illinois

2:20 p.m. **Effects of organic versus conventional diets on dam and kid weight in Nubian caprine**

Bailey Armentrout-Shoaf ¹, Isabella V. Panetta ², Christina Rocco ³, Matthew J. Soyland ⁴, Toree Williams ⁵

¹The University of Findlay, ²The University of Findlay, ³The University of Findlay, ⁴The University of Findlay, ⁵The University of Findlay

2:35 p.m. **Increasing duration of feeding high dietary lysine and energy before farrowing on colostrum quality and yield in mixed parity sows**

Joel M. DeRouchey ¹, Steve S. Dritz ², Brent Frederick ³, Robert D. Goodband ⁴, Kiah M. Gourley ⁵, Cassandra K. Jones ⁶, Analicia J. Swanson ⁷, Mike D. Tokach ⁸

¹Kansas State University, ²Kansas State University, ³Christensen Farms, ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University, ⁸Kansas State University

2:50 p.m. **Comparison of analytical methods for determination of nutrient concentration in beef cow colostrum and milk**

Ann L. Kenny ¹, Allison M. Meyer ², Abigail R. Rathert ³, Emma L. Stephenson ⁴

¹University of Missouri, ²University of Missouri, ³University of Missouri, ⁴University of Missouri

3:05 p.m. **Determination of relative bioavailability of copper from GemStone® copper in growing beef steers**

Gabrielle DiRusso ¹, Stephanie L. Hansen ², Emma Niedermayer ³

¹Iowa State University, ²Iowa State University, ³Iowa State University

3:20 p.m. **Impact of porcine reproductive and respiratory syndrome virus challenge and deoxynivalenol on intestinal integrity and nutrient transport**

Nicholas K. Gabler ¹, Samuel Gerrard ², Emma T. Helm ³, Blaire Todd ⁴

¹Department of Animal Science, College of Agriculture and Life Sciences, Iowa State University, ²Iowa State University, ³Iowa State University, ⁴Iowa State University

3:35 p.m. **Effect of feeding a blend of short, medium, and long chain fatty acids and triglycerides to lactating sows on piglet growth, feed intake, and survivability to weaning**

Mahfuz Abdullah ¹, Larissa Becker ², Mohan Dasari ³, Chad W. Hastad ⁴, Nick Knute ⁵

¹Feed Energy Company, ²New Fashion Pork, ³Feed Energy Company, ⁴New Fashion Pork, ⁵Feed Energy Company

3:50 p.m. **Evaluating the effects of day of iron injection after farrowing on preweaning performance and hematological criteria**

Joel M. DeRouchey¹, Steve S. Dritz², Robert D. Goodband³, Andrew Holtcamp⁴, Cierra Roubicek⁵, Mike D. Tokach⁶, Hayden E. Williams⁷, Jason C. Woodworth⁸

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Ceva Animal Health, LLC., ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University, ⁸Kansas State University

Graduate Student Oral Competition: PHD II

Chair:

2:30 PM - 4:20 PM

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2:30 p.m. **Graduate Student Oral Competition: PHD II Introduction**

2:35 p.m. **Inclusion of GuarPro F-71 in a corn and soybean meal based diet: Effects on growth performance and nutrient metabolism in growing pigs**

James Brett¹, Mark A. Crenshaw², M. Shamimul Hasan³, Rebecca M. Humphrey⁴, Shengfa F. Liao⁵

¹Department of Veterinary Pathobiology & Population Medicine, Mississippi State University, ²Department of Animal & Dairy Sciences, Mississippi State University, ³Department of Animal & Dairy Sciences, Mississippi State University, ⁴Department of Animal & Dairy Sciences, Mississippi State University, ⁵Dept of Animal & Dairy Sciences, Mississippi State University

2:50 p.m. **Dietary soy isoflavone ingestion alters the acute and recovery immune responses in growing pigs infected with porcine reproductive and respiratory syndrome virus**

Ryan Dilger¹, Melissa Hannas², Maci Oelschlager³, Muhammad Shameer Abdul Rasheed⁴, Brooke N. Smith⁵

¹University of Illinois at Urbana-Champaign, ²Universidade Federal de Vicosa (UFV), ³University of Illinois at Urbana-Champaign, ⁴University of Illinois at Urbana-Champaign, ⁵University of Illinois at Urbana-Champaign

3:05 p.m. **Host genetics help shape the rumen microbiome in beef cattle**

Waseem Abbas¹, Galen E. Erickson², Samodha C. Fernando³, Kristin E. Hales⁴, Jeremy T. Howard⁵, Larry A. Kuehn⁶, Henry A. Paz⁷, Matthew L. Spangler⁸, James E. Wells⁹

¹Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA, ²Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,, ³Department of Animal Science, University of Nebraska-Lincoln, ⁴Meat Animal Research Center, Clay Center, NE 68933,, ⁵Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA, ⁶USDA-ARS, U.S. Meat Animal Research Center, ⁷Department of Animal and Dairy Science, Mississippi State University, MS, USA,, ⁸Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,, ⁹Meat Animal Research Center, Clay Center, NE 68933,

3:20 p.m. **The influence of supplemental zinc, zinc source, and dietary energy level on performance measures of beef steers**

Remy N. Carmichael¹, Olivia Genter-Schroeder², Stephanie L. Hansen³

¹Iowa State University, ²Iowa State University, ³Iowa State University

3:35 p.m. **The effect of incremental dietary energy density from 13.8 to 15.9 MJ DE/kg on piglet vitality and growth to weaning**

Peadar Lawlor ¹, John O'Doherty ², Keelin O'Driscoll ³, Hazel B. Rooney ⁴
¹Teagasc, ²University College Dublin, ³Teagasc, ⁴Teagasc & University College Dublin

3:50 p.m. **Intra-nasal oxytocin treatment does not attenuate the hypothalamo-pituitary-adrenal axis in beef heifers subjected to isolation stress or restraint and isolation stress**

Justin Kieffer ¹, Anthony Parker ², Alejandro E. Relling ³, Brooklyn Wagner ⁴
¹The Ohio State University, ²The Ohio State University, ³Department of Animal Sciences, The Ohio State University, ⁴The Ohio State University

4:05 p.m. **Effects of antibiotics on growth performance, diarrhea, and bacterial translocation in weanling pigs experimentally infected with a pathogenic E. coli**

Yijie He ¹, Cynthia Jinno ², Peng Ji ³, Kwangwook Kim ⁴, Yanhong Liu ⁵, Minh Song ⁶, Seijoo Yang ⁷
¹University of California, Davis, ²University of California, Davis, ³University of California, Davis, ⁴University of California, Davis, ⁵University of California, Davis, ⁶Chungnam National University, ⁷University of California, Davis

Graduate Student Oral Competition: PHD I

Chair:

2:30 PM - 4:35 PM

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2:30 p.m. **Graduate Student Oral Competition: PHD I Introduction**

2:35 p.m. **Impact of steeping corn DDGS over 72 hours without or with fiber degrading enzymes and protease alone or in combination on concentration of sugars and organic acids and pH in the liquid medium**

Elijah Kiarie ¹, Rob Patterson ², Youngji Rho ³
¹University of Guelph, ²Canadian Bio-Systems Inc., ³University of Guelph

2:50 p.m. **Effects of cattle breed, Holstein versus Angus, and corn grain processing on diet digestibility and ruminal pH**

Pedro Carvalho ¹, Tara Felix ², Flavia Sales Silva ³
¹The Pennsylvania State University, ²The Pennsylvania State University, ³The Pennsylvania State University

3:05 p.m. **Effects of feed removal on body temperature and intestinal morphology in pigs recovering from acute hyperthermia**

Matthew P. Aardsma ¹, Alan W. Duttlinger ², Jay S. Johnson ³, Kouassi R. Kpodo ⁴, Jacob M. Maskal ⁵
¹Purdue University, ²Purdue University, ³USDA-ARS Livestock Behavior Research Unit, ⁴Purdue University, ⁵Purdue University

3:20 p.m. **Bacterial communities of the uterus and vagina between resulting pregnant and non-pregnant postpartum beef cows**

Taylor B. Ault ¹, Brooke A. Clemmons ², Felipe G. Dantas ³, J.L. Edwards ⁴, Gessica A. Franco ⁵, Phillip R. Myer ⁶, Ky G. Pohler ⁷, Sydney T. Reese ⁸, Liesel G. Schneider ⁹, Timothy P.L. Smith ¹⁰
¹University of Tennessee, ²University of Tennessee, ³University of Tennessee, ⁴University of Tennessee, ⁵Texas A&M University, ⁶University of Tennessee, ⁷Texas A&M University, ⁸Texas A&M University, ⁹University of Tennessee, ¹⁰USDA-ARS, U.S. Meat Animal Research Center

3:35 p.m. **Improving dietary amino acid balance reduces heat production in lactating sows exposed to heat stress**

Jay S. Johnson¹, Nathalie L. Trottier², Sai Zhang³

¹USDA-ARS Livestock Behavior Research Unit, ²Michigan State University, ³Michigan State University

3:50 p.m. **Lifelong dynamics of the swine gut microbiome: from birth to market.**

Charles V. Maxwell¹, Tsung Cheng. Tsai², Xiaofan Wang³, Jiangchao Zhao⁴

¹University of Arkansas - Fayetteville, ²University of Arkansas - Fayetteville, Dale Bumpers College of Agriculture, Department of Animal Science, ³University of Arkansas, ⁴University of Arkansas - Fayetteville

4:05 p.m. **Glucocorticoid receptor agonist (GRA): an alternative to in-feed antibiotics (ANT) for newly weaned pigs**

Arlene Garcia¹, John J. McGlone², Amanda R. Rakhshandeh³, Anoosh Rakhshandeh⁴, Hailey Wooten⁵

¹Texas Tech University, ²Texas Tech University, ³South Plains College, ⁴Texas Tech University, ⁵Texas Tech University

4:20 p.m. **Increasing withdrawal duration of corn distillers dried grains with solubles on finishing pig performance and carcass characteristics**

Matt W. Allerson¹, Joel M. DeRouchey², Steve S. Dritz³, Robert D. Goodband⁴, Annie B. Lerner⁵, Mike D. Tokach⁶, Jason C. Woodworth⁷

¹Holden Farms Inc., ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University

Ruminant Nutrition: Vitamins and Minerals

Chair:

3:30 PM - 4:45 PM

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3:30 p.m. **The use of low antioxidant mineral concentrations in the growing diet as a method to increase marbling deposition in feedlot cattle**

Jerad R. Jaborek¹, Alejandro E. Relling²

¹Department of Animal Sciences, The Ohio State University, ²Department of Animal Sciences, The Ohio State University

3:45 p.m. **Effect of supplemental vitamin E in feedlot receiving diets on steer performance and immune function**

Erin L. Deters¹, Stephanie L. Hansen²

¹Iowa State University, ²Iowa State University

4:00 p.m. **Supplemental copper concentration and feed restriction influence plasma metabolome of growing beef steers**

Stephanie L. Hansen¹, Katherine VanValin²

¹Iowa State University, ²Iowa State University

4:15 p.m. **Effects of supplemental copper, zinc, and manganese source on growth performance and carcass characteristics of finishing beef steers**

Shane Davis¹, Jeff S. Heldt²

¹Bos Technica Research Services, Inc., ²Micronutrients USA LLC

4:30 p.m. **Comparison of multiple trace mineral products provided to beef cattle as injectable, oral drench, oral paste, or bolus**

Remy N. Carmichael¹, Erin L. Deters², Stephanie L. Hansen³, Trey D. Jackson⁴, Elizabeth M. Messersmith⁵, Katherine VanValin⁶

¹Iowa State University, ²Iowa State University, ³Iowa State University, ⁴Iowa State University, ⁵Iowa State University, ⁶Iowa State University

Poster Session II

5:00 PM - 5:45 PM

CenturyLink Grand Ballroom Foyer

5:00 p.m. **Carcass characteristics and growth performance of market pigs fed reduced lysine diets in bedded hoop barns**

Mark S. Honeyman¹, Peter J. Lammers², Chad A. Stahl³

¹Iowa State University, ²University of Wisconsin-Platteville, ³Choice Genetics USA

5:00 p.m. **Comparison of multiple heat sources in the farrowing house: Effect on production and energy efficiency**

Jay D. Harmon¹, Anna K. Johnson², Locke A. Karriker³, Karli J. Lane⁴, Kenneth J. Stalder⁵

¹Iowa State University, ²Iowa State University, ³Iowa State University, ⁴Iowa State University, ⁵Iowa State University

5:00 p.m. **Defining pig sort loss with a simulation of various marketing options of pigs with the assumption that marketing cuts improve variation in carcass weight and leanness**

Benjamin M. Bohrer¹, Ziyu Zhou²

¹University of Guelph, ²University of Guelph

5:00 p.m. **Effect of ammoniation and harvest method on waste and consumption of corn residue bales fed to cows in a round bale feeder**

Zac Carlson¹, Ashley Conway², Mary E. Drewnoski³, Henry Hilscher⁴, Terry Klopfenstein⁵, James C. MacDonald⁶

¹University of Nebraska-Lincoln, ²University of Nebraska-Lincoln, ³University of Nebraska-Lincoln, ⁴University of Nebraska - Lincoln, ⁵University of Nebraska-Lincoln, ⁶University of Nebraska - Lincoln

5:00 p.m. **Effect of avilamycin on nursery pig performance and health**

Amanda Graham¹, Laura Greiner², Brandon Knopf³, Robyn Thompson⁴

¹Carthage Innovative Swine Solutions, ²Carthage Innovative Swine Solutions, ³Carthage Innovative Swine Solutions, ⁴Carthage Innovative Swine Solutions

5:00 p.m. **Effect of gilt feeding level and length of increased feeding level in late gestation on piglet birth weight**

Mark Knauer¹, James K. Quick²

¹Department of Animal Science, North Carolina State University, ²North Carolina State University

5:00 p.m. **Effect of mixing of extended boar semen using a bulk semen delivery system after 2 and 5 days in storage**

Megan Bock¹, Kayla M. Mills², Amanda M. Minton³, Tabitha Steckler⁴, Kara R. Stewart⁵, Steve Terlouw⁶

¹Purdue University, ²Purdue University, ³The Maschhoffs, ⁴Purdue University, ⁵Purdue University, ⁶United Animal Health

5:00 p.m. **Effect of molasses-based block supplementation on cattle fed endophyte-infected Tall Fescue (*Festuca arundinacea*) seed**

James Drouillard ¹, Luis Felipe Barbosa Braga. Feitoza ², Hans Christian. Muller ³, Tom Williams ⁴

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kansas State University

5:00 p.m. **Effect of supplementing algae to heifers during breeding and early gestation on growth and reproduction**

Brian Campbell ¹, Bethany Funnell ², Ron Lemenager ³, Griffin Nicholls ⁴, Jon P. Schoonmaker ⁵, Kara R. Stewart ⁶

¹DSM Nutritionals, ²Department of Veterinary Clinical Sciences, Purdue University, ³Department of Animal Sciences, Purdue University, ⁴Department of Animal Sciences, Purdue University, ⁵Department of Animal Sciences, Purdue University, ⁶Purdue University

5:00 p.m. **Effect of Urea and Distillers Inclusion In Dry Rolled Corn Based Diets on Heifer performance and Carcass Characteristics**

Bradley M. Boyd ¹, Galen E. Erickson ², Kristin E. Hales ³

¹University of Nebraska - Lincoln, ²Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,, ³Meat Animal Research Center, Clay Center, NE 68933,

5:00 p.m. **Effects of high protein DDGS in SFC or DRC-based diets on finishing performance of steers**

Bradley M. Boyd ¹, Galen E. Erickson ², Henry Hilscher ³, Lauren Ovinge ⁴

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

5:00 p.m. **Evaluation of RUP content and digestibility of feeds from organic and conventional sources**

Galen E. Erickson ¹, Terry Klopfenstein ², James C. MacDonald ³, Elizabeth Schumacher ⁴, Hannah Wilson ⁵

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

5:00 p.m. **Evaluation of the impact of the magnitude of errors in the sorting of pigs and market price for market on the optimal market weight**

Jian Cheng ¹, Joanna Claudy ², Yichen Que ³, Allan P. Schinckel ⁴

¹Iowa State University, ²Purdue university, ³University of Minnesota, ⁴Purdue university

5:00 p.m. **Evidence for stratification of rumen wall microbial communities revealed by 16S rRNA based amplicon sequencing.**

Heather Allen ¹, Lucas Koester ², Mark Lyte ³, Stephan Schmitz-Esser ⁴

¹National Animal Disease Center, ²Iowa State University, ³Iowa State University, ⁴Iowa State University

5:00 p.m. **Greater feed amounts during late gestation do not improve piglets birth weight: a dose-response study performed in gilts**

Mari Bernardi ¹, Fernando Bortolozzo ², Elisar Camilotti ³, Deivison Fagundes ⁴, Andre L. Mallmann ⁵, Ana Paula Mellagi ⁶, Rafael Ulguim ⁷, Carlos Vier ⁸

¹Universidade Federal do Rio Grande do Sul, ²Setor de Suínos - Universidade Federal do Rio Grande do Sul - UFRGS, ³Universidade Federal do Rio Grande do Sul, ⁴Universidade Federal do Rio Grande do Sul, ⁵Universidade Federal do Rio Grande do Sul, ⁶Setor de Suínos - Universidade Federal do Rio Grande do Sul - UFRGS, ⁷Setor de Suínos - Universidade Federal do Rio Grande do Sul - UFRGS, ⁸Universidade Federal do Rio Grande do Sul

5:00 p.m. **Impact of stocking density and number of pigs per feeder space with wet/dry feeders: an economic analysis**

Cesar A. P. Garbossa ¹, Ricardo M. Garcia ², Allan P. Schinckel ³, Marvin E. Wastell ⁴
¹University of São Paulo - USP, ²PURDUE UNIVERSITY, ³Purdue university, ⁴GroMaster

5:00 p.m. **Meat quality of Santa Inês lambs slaughtered at different backfat thickness**

Filipe Alexandre B. Castro ¹, Camila Constantino ², Francisco Fernandes Jr ³, Francine Mezzomo Giotto ⁴, Fernando Augusto Grandis ⁵, Natália Albieri Koritiaki ⁶, Edson Luis de A. Ribeiro ⁷

¹Universidade Estadual de Londrina, ²Universidade Estadual de Londrina, ³Universidade Estadual de Londrina, ⁴Universidade Estadual de Londrina, ⁵Universidade Estadual de Londrina, ⁶Universidade Estadual de Londrina, ⁷Universidade Estadual de Londrina

5:00 p.m. **Performance based NEm requirement adjustment for heifers fed during winter months in eastern South Dakota compared to the Texas panhandle**

Ethan J. Blom ¹, Wesley W. Gentry ², Rodney Preston ³, Robbi H. Pritchard ⁴, Wyatt Smith ⁵, Zachary Smith ⁶

¹South Dakota State University, ²South Dakota State University, ³Texas Tech University, ⁴Annawan Cattle, ⁵South Dakota State University, ⁶South Dakota State University

5:00 p.m. **Performance, carcass and meat quality of castrated and intact Dorper lambs slaughtered at different body condition scores**

Filipe Alexandre B. Castro ¹, Camila Constantino ², Francisco Fernandes Jr ³, Francine Mezzomo Giotto ⁴, Fernando Augusto Grandis ⁵, Natália Albieri Koritiaki ⁶, Edson Luis de A. Ribeiro ⁷

¹Universidade Estadual de Londrina, ²Universidade Estadual de Londrina, ³Universidade Estadual de Londrina, ⁴Universidade Estadual de Londrina, ⁵Universidade Estadual de Londrina, ⁶Universidade Estadual de Londrina, ⁷Universidade Estadual de Londrina

5:00 p.m. **Providing on-farm handling tools to move grow-finish pig cadavers**

Ella E. Akin ¹, Cassandra Jass ², Anna K. Johnson ³, Suzanne T. Millman ⁴, Jason W. Ross ⁵, Kenneth J. Stalder ⁶, John Stinn ⁷

¹Iowa State University, ²Iowa Select Farms, ³Iowa State University, ⁴Iowa State University, ⁵Iowa State University, ⁶Iowa State University, ⁷Iowa Select Farms

5:00 p.m. **Social structures, social ties, and development of tail biting in growing-finishing pigs**

Lee J. Johnston ¹, Yuzhi Li ²

¹University of Minnesota, ²University of Minnesota

5:00 p.m. **The effects of lift crates on sow performance and litter survival**

Hyatt Frobose ¹, Amanda Graham ², Mark Knauer ³, Dalton R. Obermier ⁴

¹JYGA Technologies USA, ²Carthage Innovative Swine Solutions, ³Department of Animal Science, North Carolina State University, ⁴North Carolina State University

5:00 p.m. **The impact of essential oil supplementation on sow milk composition and fecal dry matter**

Shannon L. Dierking¹, Merlin D. Lindemann², H. J. Monegue³

¹University of Kentucky, ²University of Kentucky, ³University of Kentucky

5:00 p.m. **Type I error rates of two strategies to analyze a randomized complete block design within multiple sites**

Hilda Calderon Cartagena¹, Steve S. Dritz², Christopher I. Vahl³

¹Kansas State University, ²Kansas State University, ³Kansas State University

Poster Session III

6:15 PM - 7:00 PM

CenturyLink Grand Ballroom Foyer

6:15 p.m. **Characterization of oxidized oil-elicited disruption of amino acid metabolism in nursery pigs through metabolomic analysis**

Chi Chen¹, Yue Guo², Andrea Hanson³, Brian Kerr⁴, Milena Saqui-Salces⁵, Gerald Shurson⁶, Pedro Urriola⁷, Lei Wang⁸

¹University of Minnesota, ²University of Minnesota, ³University of Minnesota, ⁴USDA-ARS, ⁵University of Minnesota, ⁶University of Minnesota, ⁷University of Minnesota, ⁸University of Minnesota

6:15 p.m. **Accuracy of genomic prediction of antibody response to common infectious diseases in commercial sows**

PigGen Canada¹, Jack C. M. Dekkers², John C.S. Harding³, Benny Mote⁴, Leticia Pereira Sanglard⁵, Graham S. Plastow⁶, Nick V.L. Serão⁷, Philip Willson⁸

¹PigGen Canada, ²Department of Animal Science, Iowa State University, Ames, IA 50011, ³Large Animal Clinical Sciences, University of Saskatchewan, Canada, ⁴University of Nebraska-Lincoln, ⁵Iowa State University, ⁶Livestock Gentec Centre, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Canada, ⁷Iowa State University, ⁸University of Saskatchewan

6:15 p.m. **Detection of anomalous performance measures in automatic pig feeding system.**

Belcy Angarita¹, Sarah K. Chewning², Junjie Han³, Janice Siegford⁴, Juan P. Steibel⁵

¹Michigan State University, ²Michigan State University, ³Michigan State University, ⁴Michigan State University, ⁵MSU

6:15 p.m. **Effect of WUR Genotype on Resilience to a Polymicrobial Natural Disease Challenge in Pigs**

Jack C. M. Dekkers¹, Michael Dyck², Frederic Fortin³, John C.S. Harding⁴, Ryan L. Jeon⁵, Bob Kemp⁶, Graham S. Plastow⁷, Austin M. Putz⁸

¹Department of Animal Science, Iowa State University, Ames, IA 50011, ²Livestock Gentec Centre, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Canada, ³Centre de développement du porc du Québec inc. (CDPQ), Quebec, Canada, ⁴Large Animal Clinical Sciences, University of Saskatchewan, Canada, ⁵Department of Animal Science, Iowa State University, Ames, IA 50011, ⁶PigGen Canada, Guelph, ON, Canada, ⁷Livestock Gentec Centre, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Canada, ⁸Department of Animal Science, Iowa State University, Ames, IA 50011

6:15 p.m. **Genes and functions associated with tolerance to fescue toxicosis in Angus cows**

Piush Khanal¹, Kyle Mayberry², Daniel H. Poole³, Matthew H. Poore⁴, Leticia P. Sanglard⁵, Nick V.L. Serão⁶, Jeffrey Sommer⁷

¹North Carolina State University, ²North Carolina State University, ³North Carolina State University, ⁴North Carolina State University, ⁵Iowa State University, ⁶Iowa State University, ⁷North Carolina State University

6:15 p.m. **Genetic diversity and population structure in nine beef cattle sub-populations using whole genome SNP markers**

Nayan Bhowmik¹, Carl R. Dahlen², Lauren L. Hulsman Hanna³, Kris A. Ringwall⁴, Kendall C. Swanson⁵

¹Department of Animal Sciences, North Dakota State University, ²Department of Animal Sciences, North Dakota State University, ³Department of Animal Sciences, North Dakota State University, ⁴Dickinson Research Extension Center, North Dakota State University, ⁵Department of Animal Sciences, North Dakota State University

6:15 p.m. **Genetic parameters and the purebred–crossbred genetic correlation for growth, carcass, and meat quality traits in pigs**

Jack C. M. Dekkers¹, Hadi Esfandyari², Robert A. Kemp³, Graham S. Plastow⁴, Dinesh M. Thekkoot⁵

¹Department of Animal Science, Iowa State University, Ames, IA 50011, ²Iowa State University, ³Genesis Inc., ⁴Livestock Gentec Centre, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Canada, ⁵University of Alberta

6:15 p.m. **Genomic Prediction of Reproductive Performance of Commercial Sows in Health Challenged Herds**

PigGen Canada¹, Jack C. M. Dekkers², John C.S. Harding³, Benny Mote⁴, Graham S. Plastow⁵, Cassandra Scanlan⁶, Nick V.L. Serão⁷, Philip Willson⁸

¹PigGen Canada, ²Department of Animal Science, Iowa State University, Ames, IA 50011, ³Large Animal Clinical Sciences, University of Saskatchewan, Canada, ⁴University of Nebraska-Lincoln, ⁵Livestock Gentec Centre, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Canada, ⁶Iowa State University, ⁷Iowa State University, ⁸University of Saskatchewan

6:15 p.m. **Heritability estimates for sow prolapse**

Marcie I. Christianson¹, Kent Gray², Jeremy Howard³, Kenneth J. Stalder⁴, China Supakron⁵

¹Iowa State University, ²Smithfield Premium Geneitcs, ³Smithfield Premium Geneitcs, ⁴Iowa State University, ⁵Iowa State University

6:15 p.m. **Nutritional value of high-lysine sorghum, red sorghum, white sorghum, and corn fed to growing pigs**

Charmaine D. Espinosa¹, Robert D. Goodband², Hans H. Stein³, Lori L. Thomas⁴

¹University of Illinois at Urbana-Champaign, ²Kansas State University, ³University of Illinois at Urbana-Champaign, ⁴Kansas State University

6:15 p.m. **Nutritive value of expeller-pressed carinata cake for pigs**

Tofuko A. Woyengo¹

¹South Dakota State University

6:15 p.m. **Oil source and peroxidation affects performance and vitamin E status in nursery pigs**

Richard Faris¹, Brian Kerr², Stephanie Lindblom³, Junmei Zhao⁴

¹Cargill Premix & Nutrition, ²USDA-ARS, ³Cargill Premix & Nutrition, ⁴Cargill Premix & Nutrition

6:15 p.m. **Optimal ratio of standardized ileal digestible total sulfur amino acid to lysine for 5 to 22 kg pigs under antibiotic-free regime**

Marcio Goncalves¹, Bradley Lawrence², Yulin Ma³, Uislei Orlando⁴, Ping Ren⁵, Mercedes Vazquez-Anon⁶

¹Genus PIC, ²Novus International, Inc, ³Novus International, Inc, ⁴Genus PIC, ⁵Novus International, Inc, ⁶Novus International, Inc

6:15 p.m. **Performance differences between two groups of commercial pigs following experimental infection with porcine reproductive and respiratory syndrome virus (PRRS) virus 1-7-4**

Scott Dee¹, Jenelle Dunkelberger², John Eggert³, Michael Gonda⁴, Dan Hanson⁵, Erin Little⁶, Michael MacNeil⁷

¹Pipestone Applied Research, ²Topigs Norsvin USA, ³Topigs Norsvin USA, ⁴South Dakota State University, ⁵Pipestone Applied Research, ⁶Pipestone Applied Research, ⁷Delta G

6:15 p.m. **Performance of DNA 600 Duroc sired pigs when split sex fed with commercial diets with or without a blend of phytonutrients (Lean Fuel)**

Megan R. Bible¹, Steve J. England², Fredrik Sandberg³, Kevin T. Soltwedel⁴

¹Furst-McNess, ²Furst-McNess, ³Furst-McNess, ⁴Furst-McNess

6:15 p.m. **Peripheral blood parameters as proxies of performance in beef cattle: Heritability and genetic correlations between peripheral blood parameters and performance phenotypes.**

Karen Anschutz¹, Elizabeth A. Backes², Josue Chinchilla-Vargas³, Donald S. Hubbell⁴, James E. Koltes⁵, Luke M. Kramer⁶, Toby D. Lester⁷, Jeremy G. Powell⁸, Max F. Rothschild⁹, Kenneth J. Stalder¹⁰, John D. Tucker¹¹

¹University of Arkansas, ²University of Arkansas, ³Iowa State University, ⁴University of Arkansas, ⁵Iowa State University, ⁶Iowa State University, ⁷University of Arkansas, ⁸University of Arkansas, ⁹Iowa State University, ¹⁰Iowa State University, ¹¹University of Arkansas

6:15 p.m. **Preliminary exploration of relationship of automated sensor data with feed intake and efficiency in lactating dairy cattle.**

Lance H. Baumgard¹, Brady M. Goetz², James E. Koltes³, Cori J. Siberski⁴

¹Iowa State University, ²Iowa State University, ³Iowa State University, ⁴Iowa State University

6:15 p.m. **Processing of food proteins of animal origin sometimes, but not always, increases values for Digestible Indispensable Amino Acid Scores**

Hannah M. Bailey¹, Eric P. Berg², Hans H. Stein³

¹University of Illinois, ²North Dakota State University, ³University of Illinois at Urbana-Champaign

6:15 p.m. **Production trait differences between show pig and commercial genetic lines**

Mark Knauer¹, Dalton R. Obermier², Zack Peppmeier³

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

6:15 p.m. **Selenium requirement of turkeys based on tissue selenium concentration and selenoprotein activity and transcript expression**

Roger A. Sunde¹, Rachel M. Taylor²

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

6:15 p.m. **Semen Quality effect on Conception Rate among Three Purebred Swine Lines**

Caitlyn Bruns ¹, Giselle Kruse ²
¹DNA Genetics, ²DNA Genetics

6:15 p.m. **Standardized total tract digestibility of Ca by growing pigs in different sources of calcium carbonate and dicalcium phosphate**

Su A Lee ¹, Hans H. Stein ², Carrie L. Walk ³
¹University of Illinois at Urbana-Champaign, ²University of Illinois at Urbana-Champaign, ³AB Vista

6:15 p.m. **Supplementation of mint oil and yeast cell in lactation diets on performance of offspring during the early-post weaning period.**

James L. Dunn ¹, Lily P. Hernandez ², Crystal L. Levesque ³, Joel Wenninghoff ⁴
¹ADM Animal Nutrition, ²South Dakota State University, ³South Dakota State University, ⁴ADM Animal Nutrition

6:15 p.m. **The Effect of Activo and a Competitor Phytogenic on growth performance and carcass characteristics of grow-finish pigs**

Rafael A. Cabrera ¹
¹EW Nutrition USA, Inc.

Tuesday, March 12, 2019

Poster Session IV

7:30 AM - 8:15 AM

CenturyLink Grand Ballroom Foyer

7:30 a.m. **A 6-phytase, Natuphos® E, target dosing energy release compared with fat in corn, soy diets fed to pigs**

Michael Coelho ¹, Robert Jones ², Frank Parks ³
¹BASF, ²Integrated Farm Research, Inc., ³Integrated Farm Research, Inc.

7:30 a.m. **A fortified protein blend as a replacement for animal and fish proteins in nursery pig diets: Effects on growth performance, immune status, microbial metabolites, and fecal scoring**

Matthew D. Asmus ¹, Vinícius S. Cantarelli ², Clayton S. Chastain ³, Alan W. Duttlinger ⁴, Julie A. Feldpausch ⁵, Dan B. Jones ⁶, Kayla M. Mills ⁷, Jorge Y P. Palencia ⁸, Brian T. Richert ⁹, Jacob A. Richert ¹⁰, Morgan T. Thayer ¹¹
¹Archer Daniels Midland Company, ²Federal University of Lavras, ³Purdue University, ⁴Purdue University, ⁵Purdue University, ⁶Archer Daniels Midland Company, ⁷Purdue University, ⁸Universidade Federal de Lavras – Brazil, ⁹Purdue University, ¹⁰Kansas State University, ¹¹Purdue University

7:30 a.m. **A strong correlation between mini and commercial pigs in phosphorus digestibility of feed ingredients**

Hyunwoong Jo ¹, Beob G. Kim ²
¹Konkuk University, ²Konkuk University

7:30 a.m. **Apparent ileal and total tract digestibility of energy and carbohydrates in hybrid rye and other cereal grains fed to growing pigs**

Molly L. McGhee¹, Hans H. Stein²

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

7:30 a.m. **Basal endogenous loss, standardized total tract digestibility, and retention of Ca in sows change throughout gestation, but microbial phytase reduces basal endogenous loss of Ca by gestating sows**

Su A Lee¹, Hans H. Stein², Carrie L. Walk³

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

7:30 a.m. **Can dietary oxidized protein induce oxidative stress in pigs?**

Carl A. Frame¹, Erika M. Johnson², Logan R. Kilburn³, Mariana C. Rossoni Serao⁴

¹Iowa State University, ²Iowa State University, ³Iowa State University, ⁴Iowa State University

7:30 a.m. **Comparison of amino acid digestibility in feed ingredients for mini and commercial pigs**

Jolie C. González-Vega¹, John K. Htoo², Hyunwoong Jo³, Beob G. Kim⁴

¹Evonik Corporation, ²Evonik Nutrition & Care GmbH, ³Konkuk University, ⁴Konkuk University

7:30 a.m. **Comparison of nursery pig feed programs with or without spray dried plasma**

Joy M. Campbell¹, Joe D. Crenshaw², Javier Polo³

¹APC Inc, ²APC Inc, ³APC Inc

7:30 a.m. **Description of a novel Calorimetric unit to determine net energy in group housed pigs**

Cristhiam J. Muñoz¹, Hans H. Stein²

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

7:30 a.m. **Development of a modelling framework to account for P kinetics in growing and finishing pigs**

Joao A.N. Filipe¹, Ilias Kyriazakis², Maciej M. Misiura³, Carrie L. Walk⁴

¹Newcastle University, ²Newcastle University, ³Newcastle University, ⁴AB Vista

7:30 a.m. **Development of an indirect calorimetry system to determine heat production in individual lactating sows**

Jay S. Johnson¹, Jacob M. Maskal², Gabriela M. Morello³, Nathalie L. Trottier⁴, Sai Zhang⁵

¹USDA-ARS Livestock Behavior Research Unit, ²Purdue University, ³Purdue University, ⁴Michigan State University, ⁵Michigan State University

7:30 a.m. **Diet nutrient digestibility and growth performance in weaned pigs fed steam-exploded canola meal**

Eduardo Beltranena¹, Bich Van Le Thanh², Rex N. Newkirk³, Joaquin J. Sanchez-Zannatta⁴, Lifang Wang⁵, Ruurd T. Zijlstra⁶

¹Alberta Agriculture and Forestry, ²University of Alberta, ³University of Saskatchewan, ⁴Department of Agricultural, Food and Nutritional Science, University of Alberta, ⁵University of Alberta, ⁶Department of Agricultural, Food and Nutritional Science, University of Alberta, University of Alberta

7:30 a.m. **Dietary spray dried plasma on immune responses of lactating sows and their litters**

Jangryeol Baek ¹, Jeehwan Choe ², Peng Ji ³, Joowon Kang ⁴, Byeonghyeon Kim ⁵, Junsu Kim ⁶, Kwangwook Kim ⁷, Sheena Kim ⁸, Soyun Kim ⁹, Jeongjae Lee ¹⁰, Daye Mun ¹¹, Minho Song ¹²

¹Chungnam National University, ²Chungnam National University, ³University of California, Davis, ⁴Chungnam National University, ⁵Chungnam National University, ⁶Chungnam National University, ⁷University of California, Davis, ⁸Chungnam National University, ⁹Chungnam National University, ¹⁰Chungnam National University, ¹¹Chungnam National University, ¹²Chungnam National University

7:30 a.m. **Digestibility evaluation of fermented soybean for nursery piglets**

Gabriel Arruda ¹, Vinícius S. Cantarelli ², Rhuan Chaves ³, Ricardo M. Garcia ⁴, Melissa Mendes ⁵, Charles Ribeiro ⁶

¹Federal University of Lavras, ²Federal University of Lavras, ³Federal University of Lavras, ⁴PURDUE UNIVERSITY, ⁵Federal University of Lavras, ⁶Federal University of Lavras

7:30 a.m. **Effect of a 1-monoglyceride, 1,2-diglyceride of butyric-, caproic- and caprilic acid, and Avilamycin on performance and intestinal E. coli when fed to piglets challenged with E. coli**

Peter Ader ¹, Michael Coelho ²

¹BASF SE, ²BASF

7:30 a.m. **Effect of a 1-monoglyceride, 1,2-diglyceride of butyric-, caproic- and caprilic acid, C. butyricum Probiotic and Avilamycin on performance on pigs challenged with Salmonella**

Peter Ader ¹, Michael Coelho ²

¹BASF SE, ²BASF

7:30 a.m. **Effect of a yeast product supplementation on growth performance, nutrient digestibility and cytokines mRNA expression in weanling piglets reared under low sanitary environment**

Bruno Bertaud ¹, Fernando Bravo de Laguna Ortega ², In Ho Kim ³, Yong Min Kim ⁴

¹Lallemand Animal Nutrition, ²Lallemand Animal Nutrition, ³Dankook Univ., ⁴Dankook Univ.

7:30 a.m. **Effect of carbohydrases on growth performance, nutrient digestibility, blood profiles and fecal microbiota in weanling pigs fed reduced energy diet**

Jemin Ahn ¹, Xiang Ao ², In Ho Kim ³, Haoyang Sun ⁴

¹Dankook Univ., ²Dankook Univ., ³Dankook Univ., ⁴Dankook Univ.

7:30 a.m. **Effect of combinations of feed enzymes on growth performance, and nutrient digestibility in nursery pigs fed complex diets**

Yi-Chi Cheng ¹, Ki Beom Jang ², Sung Woo Kim ³, Wenting Li ⁴, Debora Muratori Holanda ⁵

¹North Carolina State University, ²North Carolina State University, ³North Carolina State University, ⁴DuPont Animal Nutrition, ⁵North Carolina State University

7:30 a.m. **Effect of dietary fiber source on growth performance and carcass characteristics of finishing pigs**

Michaela B. Braun ¹, Joel M. DeRouchey ², Steve S. Dritz ³, Kara M. Dunmire ⁴, Robert D. Goodband ⁵, Chad B. Paulk ⁶, Lori L. Thomas ⁷, Mike D. Tokach ⁸, Courtney N. Truelock ⁹, Jason C. Woodworth ¹⁰

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University, ⁸Kansas State University, ⁹Kansas State University, ¹⁰Kansas State University

7:30 a.m. **Effect of dietary glycine on growth performance and skin collagen abundance of nursery pigs fed low crude protein diets**

John Cant ¹, John K. Htoo ², Lee-Anne Huber ³, Wilfredo Mansilla ⁴, Anna Kate Shoveller ⁵, Kayla E. Silva ⁶

¹University of Guelph, ²Evonik Nutrition & Care GmbH, ³University of Guelph, ⁴University of Guelph, ⁵University of Guelph, ⁶University Of Guelph

7:30 a.m. **Effect of Phytase, Natuphos® E, Target Dosing on pig performance and feed cost savings from wean to finish**

Michael Coelho ¹, Robert Jones ², Frank Parks ³

¹BASF, ²Integrated Farm Research, Inc., ³Integrated Farm Research, Inc,

7:30 a.m. **Effect of selenium and superoxide dismutase supplementation on heat stressed pigs**

Jeremy J. Cottrell ¹, Kristy DiGiacomo ², Frank R. Dunshea ³, John B. Furness ⁴, Nicholas K. Gabler ⁵, Deborah J. Phillips ⁶, Hieu H. Le ⁷, Brian J. Leury ⁸, David Renaudeau ⁹, Eugeni Roura ¹⁰, Eva Vidacs ¹¹, Gene Wijffels ¹², Weicheng Zhao ¹³

¹Faculty of Veterinary and Agricultural Sciences, The University of Melbourne, Parkville, Australia, ²Faculty of Veterinary and Agricultural Sciences, the University of Melbourne, Parkville, Australia, ³Faculty of Veterinary and Agricultural Sciences, The University of Melbourne, Parkville, Australia, ⁴Faculty of Veterinary and Agricultural Sciences, the University of Melbourne, Parkville, Australia, ⁵Department of Animal Science, College of Agriculture and Life Sciences, Iowa State University, ⁶Faculty of Veterinary and Agricultural Sciences, the University of Melbourne, Parkville, Australia, ⁷Faculty of Veterinary and Agricultural Sciences, the University of Melbourne, Parkville, Australia, ⁸Faculty of Veterinary and Agricultural Sciences, the University of Melbourne, Parkville, Australia, ⁹Institut national de la recherche agronomique (INRA), ¹⁰Centre for Nutrition and Food Sciences, The University of Queensland, ¹¹Faculty of Veterinary and Agricultural Sciences, the University of Melbourne, Parkville, Australia, ¹²Commonwealth Scientific and Industrial Research Organisation (CSIRO), ¹³Faculty of Veterinary and Agricultural Sciences, the University of Melbourne, Parkville, Australia

7:30 a.m. **Effect of sub-therapeutic antibiotics and pharmacological Zinc oxide on nursery pig performance and intestinal integrity and function**

Eric R. Burrough ¹, Carson De Mille ², Nicholas K. Gabler ³, Emma T. Helm ⁴, Crystal L. Loving ⁵

¹Iowa State University, ²Iowa State University, ³Department of Animal Science, College of Agriculture and Life Sciences, Iowa State University, ⁴Iowa State University, ⁵USDA-ARS-National Animal Disease Center

7:30 a.m. **Effect of xylanase and xylo-oligosaccharides on growth performance and intestinal microbiota in piglets fed a corn-soybean meal based diet**

Alexandre Barbosa de Brito ¹, M.A. Callegari ², Gustavo Cordero ³, Caio Abercio da Silva ⁴, Gemma González-Ortiz ⁵, Laura Merriman ⁶

¹AB Vista, ²Universidade Estadual de Londrina, ³AB Vista, ⁴Universidade Estadual de Londrina, ⁵AB Vista, ⁶AB Vista

Beef & Small Ruminant Livestock

Chair:

8:30 AM - 9:15 AM

211/212

8:30 a.m. Effect of implant status and non-hormone treated cattle status on sale price of beef calves-Superior Livestock Video Auction

Karol E. Fike¹, Kevin L. Hill², Mike E. King³, Esther D. McCabe⁴, Kenneth G. Odde⁵, Glenn M. Rogers⁶, Maggie J. Smith⁷

¹Kansas State University, ²Merck Animal Health, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University, ⁶Grassy Ridge Consulting, ⁷Kansas State University

8:45 a.m. Factors affecting the sale price of bred heifers sold through Superior Livestock video auctions from 2010 through 2017

Karol E. Fike¹, Kevin L. Hill², Mike E. King³, Esther D. McCabe⁴, Kenneth G. Odde⁵, Glenn M. Rogers⁶, Maggie J. Smith⁷

¹Kansas State University, ²Merck Animal Health, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University, ⁶Grassy Ridge Consulting, ⁷Kansas State University

9:00 a.m. Effect of housing cow-calf pairs on dry lots vs pasture on calf performance and behavior

Wesley P. Chapple¹, Ashley E. Cooney², William T. Meter³, Lucas T. Neira⁴, Daniel W. Shike⁵

¹University of Illinois, ²University of Illinois, ³University of Illinois, ⁴University of Illinois, ⁵University of Illinois

Animal Behavior, Welfare and Housing I

Chair:

8:30 AM - 9:45 AM

201

8:30 a.m. Effect of feeding time on behavioral and stress responses in gestation sows under isocaloric conditions

S. K. Baidoo¹, J. Cairns², Q Huang³, M. C. Keyes⁴, S. H. Lee⁵, Hayford Manu⁶, D Pangen⁷

¹University of Minnesota, ²Remote Insights, ³University of Minnesota, ⁴Remote Insights, ⁵University of Minnesota, ⁶University of Minnesota, ⁷University of Minnesota

8:45 a.m. Effects of cooled floor pads and cooled drinking water on behavior of lactating sows under heat stress

Eric Buchanan¹, Lee J. Johnston², Yuzhi Li³, Maria Lou⁴, Michael Reese⁵

¹University of Minnesota, ²University of Minnesota, ³University of Minnesota, ⁴University of Minnesota, ⁵University of Minnesota

9:00 a.m. Effect of method of drying piglets at birth on rectal temperature over the first 24 hours after birth.

Stephan Alencar¹, Katie Brown², Naomi Cooper³, Michael Ellis⁴, Caleb M. Shull⁵, Andres Tolosa⁶, Katherine D. Vande Pol⁷

¹Doutorando na Universidade Federal de Mato Grosso do Sul, ²The Maschhoffs, ³University of Illinois, ⁴University of Illinois, ⁵The Maschhoffs, ⁶University of Illinois, ⁷University of Illinois

9:15 a.m. **Effect of piglet birth weight and drying on post-natal changes in rectal temperature**

Naomi Cooper ¹, Michael Ellis ², Richard Gates ³, Katherine D. Vande Pol ⁴, Yijie Xiong ⁵
¹University of Illinois, ²University of Illinois, ³University of Illinois, ⁴University of Illinois, ⁵University of Illinois

9:30 a.m. **Effect of group size during the nursery period on wean-to-finish growth performance in a PRRS positive population of pigs.**

Michael Ellis ¹, Heath M. Harper ², Rachel Schmitt ³, Clint R. Schwab ⁴, Caleb M. Shull ⁵
¹University of Illinois, ²University of Illinois, ³University of Illinois, ⁴The Maschhoffs, ⁵The Maschhoffs

Ruminant Nutrition: Protein

Chair:

8:30 AM - 9:45 AM

213

8:30 a.m. **Metabolizable protein requirement of lightweight beef calves**

Joshua C. McCann ¹, Miles D. Redden ², Daniel W. Shike ³
¹University of Illinois, ²University of Illinois, ³University of Illinois

8:45 a.m. **Effect of Adding Urea to Finishing Diets Containing Two Different Inclusions of Distillers Grains on Steer Performance and Carcass Characteristics**

Bradley M. Boyd ¹, Galen E. Erickson ², Matthew Luebke ³, James C. MacDonald ⁴
¹University of Nebraska - Lincoln, ²Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,, ³University of Nebraska - Lincoln, ⁴University of Nebraska - Lincoln

9:00 a.m. **Effects of ruminally-protected lysine and Megasphaera elsdenii on performance and carcass characteristics of finishing cattle**

Celine Aperce ¹, Adrian Baker ², James Drouillard ³, Lucas Horton ⁴, Vanessa Veloso ⁵
¹MS Biotec, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University

9:15 a.m. **Evaluation of sources of RUP fed to Holstein steers in a simulated organic beef production system**

Zachary E. Carlson ¹, Galen E. Erickson ², Henry Hilscher ³, Terry Klopfenstein ⁴, James C. MacDonald ⁵, Levi McPhillips ⁶, Elizabeth Schumacher ⁷, Hannah C. Wilson ⁸
¹University of Nebraska - Lincoln, ²Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,, ³University of Nebraska - Lincoln, ⁴University of Nebraska-Lincoln, ⁵University of Nebraska - Lincoln, ⁶University of Nebraska-Lincoln, ⁷University of NE - Lincoln, ⁸University of Nebraska - Lincoln

9:30 a.m. **Effects of Supplemental SoyPass in Forage-based Diets Containing Distillers Grains on Performance of Growing Steers**

Zachary E. Carlson ¹, Galen E. Erickson ², Terry Klopfenstein ³, Tyler J. Spore ⁴, Andrea K. Watson ⁵
¹University of Nebraska - Lincoln, ²Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,, ³University of Nebraska-Lincoln, ⁴University of Nebraska-Lincoln, ⁵University of Nebraska - Lincoln

Physiology Symposium

Chair:

8:30 AM - 10:20 AM
205/206

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

8:35 a.m. **Attainment and Maintenance of Pubertal Cyclicity May Predict High A4 cows with Reduced Fertility**

Mohamed Abedal-Majed¹, Jeff Bergman², Andrea S. Cupp³, John Davis⁴, Mariah Hart⁵, Scott Kurz⁶, Sarah Nafziger⁷, Alexandria Snider⁸, Adam Summers⁹, Sarah Tenley¹⁰, Jennifer Wood¹¹

¹University of Jordan, ²University of Nebraska-Lincoln, ³University of Nebraska-Lincoln, ⁴University of Nebraska Medical Center, ⁵University of Nebraska-Lincoln, ⁶University of Nebraska-Lincoln, ⁷University of Nebraska-Lincoln, ⁸University of Nebraska-Lincoln, ⁹New Mexico State University, ¹⁰University of Nebraska-Lincoln, ¹¹University of Nebraska-Lincoln

9:05 a.m. **Genomics of age at puberty in gilts**

Daniel Ciobanu¹

¹University of Nebraska-Lincoln

9:35 a.m. **Neuroendocrine Pathways and the Nutritional Control of Puberty in Heifers**

Rodolfo C. Cardoso¹, Gary L. Williams²

¹Texas A&M University, ²Texas A&M AgriLife Research

10:05 a.m. **Physiology Symposium Panel**

Physiology: Reproductive Physiology

Chair:

8:30 AM - 10:45 AM
202

8:30 a.m. **Transcriptome profiling of olfactory epithelium in normal cycling and acyclic gilts.**

Aaron M. Dickey¹, Clay A. Lents², Dan J. Nonneman³

¹USDA, ARS, U.S. Meat Animal Research Center, ²USDA, ARS, U.S. Meat Animal Research Center, ³USDA, ARS, U.S. Meat Animal Research Center

8:45 a.m. **Ovarian ultrasound of sows by parity and season to determine effects of induced ovulation and single PCAI on farrowing rate and litter size**

Lidia S. Arend¹, Steve Buysse², Mike E. Johnston³, Robert V. Knox⁴, Amanda M. Minton⁵, Catherine M. Roaten⁶, Clint R. Schwab⁷, Caleb M. Shull⁸, Stephen K. Webel⁹

¹University of Illinois, ²United Animal Health, ³United Animal Health, ⁴University of Illinois, ⁵The Maschhoffs, ⁶United Animal Health, ⁷The Maschhoffs, ⁸The Maschhoffs, ⁹United Animal Health

9:00 a.m. **Epigenetic marks within the swine placenta are differentially expressed due to factors associated with season.**

Jeremy R. Miles¹, Lea A. Rempel²

¹USDA, ARS, USMARC, ²USDA, ARS, USMARC

9:15 a.m. **Use of a genetically-engineered swine line to elucidate the role of GnRH-II and its receptor in gilts**

Rebecca Cederberg¹, Amy T. Desaulniers², Ginger Mills³, Brett White⁴

¹University of Nebraska-Lincoln, ²University of Central Missouri, ³University of Nebraska-Lincoln, ⁴University of Nebraska-Lincoln

9:30 a.m. **Reproductive Physiology Break**

9:45 a.m. **Effects of low doses of GnRH at CIDR removal on estrus expression and conception rates in beef heifers**

Nicholas W. Dias¹, Kaitlin M. Epperson², Saulo Menegatti Zoca³, Vitor R. G. Mercadante⁴, Emmalee J. Northrop⁵, Stephanie D. Perkins⁶, George A. Perry⁷, Jerica J.J. Rich⁸, Claire L. Timlin⁹, Julie A. Walker¹⁰

¹Department of Animal and Poultry Science, Virginia Tech, ²Department of Animal Science, South Dakota State University, ³Department of Animal Science, South Dakota State University, ⁴Department of Animal and Poultry Science, Virginia Tech, ⁵Department of Animal Science, South Dakota State University, ⁶Department of Animal Science, South Dakota State University, ⁷Department of Animal Science, South Dakota State University, ⁸Department of Animal Science, South Dakota State University, ⁹Department of Animal and Poultry Science, Virginia Tech, ¹⁰Department of Animal Science, South Dakota State University

10:00 a.m. **Effect of GnRH Injection at -72 h in MGA-PG Estrus Synchronization Protocol**

McKay Erickson¹, Rick N. Funston²

¹University of Nebraska Lincoln, ²University of Nebraska-Lincoln, West Central Research and Extension Center

10:15 a.m. **Influence of daily temperature fluctuations on estrus activity determined by an electronic estrus detection system and conception to artificial insemination in cross-bred beef heifers**

Tami M. Brown-Brandl¹, Chadwick C. Chase², Robert A. Cushman³, Larry A. Kuehn⁴, Emmalee J. Northrop⁵, George A. Perry⁶, Jerica J.J. Rich⁷, Warren M. Snelling⁸, R. Mark. Thallman⁹

¹USDA-ARS-MARC, ²USDA, ARS, U.S. Meat Animal Research Center, ³USDA, ARS, U.S. Meat Animal Research Center, ⁴USDA-ARS, U.S. Meat Animal Research Center, ⁵Department of Animal Science, South Dakota State University, ⁶Department of Animal Science, South Dakota State University, ⁷Department of Animal Science, South Dakota State University, ⁸USDA, ARS, U.S. Meat Animal Research Center, ⁹USDA, ARS, U.S. Meat Animal Research Center

10:30 a.m. **Influence of BVDV exposure on AI conception and breeding season pregnancy success in beef herds**

Russell F. Daly¹, Kaitlin M. Epperson², Saulo Menegatti Zoca³, Emmalee J. Northrop⁴, Stephanie D. Perkins⁵, George A. Perry⁶, Jim R. Rhoades⁷, Jerica J.J. Rich⁸, Julie A. Walker⁹

¹Veterinary & Biomedical Sciences, South Dakota State University, ²Department of Animal Science, South Dakota State University, ³Department of Animal Science, South Dakota State University, ⁴Department of Animal Science, South Dakota State University, ⁵Department of Animal Science, South Dakota State University, ⁶Department of Animal Science, South Dakota State University, ⁷IDEXX Laboratories, ⁸Department of Animal Science, South Dakota State University, ⁹Department of Animal Science, South Dakota State University

Nonruminant Nutrition: Feed Additives II: Nursery

Chair:

8:30 AM - 11:00 AM

214

8:30 a.m. Can exogenous carbohydrase supplementation to higher-fiber diets improve gut function, microbiota, and growth performance of weaned pigs?

Eric R. Burrough¹, Nicholas K. Gabler², Qingyun Li³, Crystal L. Loving⁴, John F. Patience⁵, Stephan Schmitz-Esser⁶

¹Iowa State University, ²Department of Animal Science, College of Agriculture and Life Sciences, Iowa State University, ³Dept. of Animal Science, Iowa State University, ⁴USDA-ARS-National Animal Disease Center, ⁵Dept. of Animal Science, Iowa State University, ⁶Iowa State University

9:00 a.m. Effect of a proprietary medium chain fatty acid blend on nursery pig performance

Ana De Souza¹, Vanessa Iseri², Venkatesh Mani³, Dillon Mellick⁴

¹Kemin Industries, ²Kemin Industries, ³Kemin Industries, ⁴Kemin Industries

9:15 a.m. The impact of F18 ETEC challenge on intestinal integrity and immune response of nursery pigs, and the potential protective effects of direct-fed microbial blends

Spenser L. Becker¹, Eric R. Burrough², Qingyun Li³, John F. Patience⁴

¹Dept. of Animal Science, Iowa State University, ²Iowa State University, ³Dept. of Animal Science, Iowa State University, ⁴Dept. of Animal Science, Iowa State University

9:30 a.m. The impact of Swine Awake® on commercial nursery flows from a PRRSV positive source

Scott Heintzelman¹, Tyler Holck², Randy Jones³, Emily Sugg⁴, Sarah A. Weiland⁵

¹NutriQuest, ²NutriQuest, ³Livestock Veterinary Services, ⁴North Carolina State University, ⁵NutriQuest

10:00 a.m. Evaluation of a medium chain fatty acid-based feed additive for nursery pigs

Joel M. DeRouchey¹, Steve S. Dritz², Robert D. Goodband³, Dillon Mellick⁴, Lori L. Thomas⁵, Mike D. Tokach⁶, Hayden E. Williams⁷, Jason C. Woodworth⁸

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kemin Industries, ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University, ⁸Kansas State University

10:15 a.m. The effect of Activo Liquid supplemented via the water against Mecadox 50 on Nursery Pig's Growth Performance and Survival

Rafael A. Cabrera¹

¹EW Nutrition USA, Inc.

10:30 a.m. The effects of functional feed additive proteins with or without antibiotics on the growth and health status of nursery pigs

John F. Patience¹, Leigh A. Ruckman²

¹Dept. of Animal Science, Iowa State University, ²Dept. of Animal Science, Iowa State University

10:45 a.m. **Effects of a Bacillus-based probiotic and prebiotics on nursery pig performance, fecal consistency, and fecal microflora**

Mariana Boscato Menegat¹, Michaela B. Braun², Jim Bryte³, Joel M. DeRouchey⁴, Steve S. Dritz⁵, Robert D. Goodband⁶, Mike D. Tokach⁷, Jason C. Woodworth⁸

¹Kansas State University, ²Kansas State University, ³Quality Technology International, Inc., ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University, ⁸Kansas State University

Nutritional Physiology and Microbiome

Chair:

8:30 AM - 11:30 AM

203/204

8:30 a.m. **Comparative transcriptomic analysis between Total RNA and mRNA isolated from feces of neonatal dairy calves**

Johan S. Osorio¹, Fernanda Rosa²

¹South Dakota State University, ²South Dakota State University

8:45 a.m. **Depriving piglets of maternal feces changes piglet physiology and performance before and after weaning**

Edgar O. Aviles¹, John J. McGlone², Anoosh Rakhshandeh³

¹Texas Tech University, ²Texas Tech University, ³Texas Tech University

9:00 a.m. **Characterisation of poor gastrointestinal tract development in gilt progeny**

Cherie Collins¹, Jeremy Cottrell², Jessica Craig³, Frank R. Dunshea⁴, Linda Fothergill⁵, John B. Furness⁶, Lynette Munoz⁷, Korrily O'Halloran⁸, John Pluske⁹, Mitchell Ringue¹⁰, Diana Turpin¹¹, Danni A. Wijesiriwardana¹²

¹Rivalea Australia, ²University of Melbourne, ³Rivalea Australia, ⁴Faculty of Veterinary and Agricultural Sciences, The University of Melbourne, Parkville, Australia, ⁵University of Melbourne, ⁶Faculty of Veterinary and Agricultural Sciences, the University of Melbourne, Parkville, Australia, ⁷University of Melbourne, ⁸Rivalea, ⁹Murdoch University, ¹⁰University of Melbourne, ¹¹Murdoch University, ¹²University of Melbourne

9:15 a.m. **Body temperature of pigs exposed to heat stress conditions: effect of dietary protein level**

Miguel J. Cervantes¹, Adriana Morales²

¹UABC, ²Universidad Autónoma de Baja California

9:30 a.m. **Direct comparison of human microbiota-associated (HMA) gnotobiotic piglet and mouse models**

Nirosh D. Aluthge¹, Alison C. Bartenslager², Thomas E. Burkey³, Samodha C. Fernando⁴, Kelly D. Heath⁵, Hatem Kittana⁶, Craig Kreikemeier-Bower⁷, Amanda E. Ramer-Tait⁸, Wesley A. Tom⁹

¹Department of Animal Science, University of Nebraska-Lincoln, ²Department of Animal Science, University of Nebraska-Lincoln, ³Department of Animal Science, University of Nebraska-Lincoln, ⁴Department of Animal Science, University of Nebraska-Lincoln, ⁵University of Nebraska-Lincoln, ⁶Department of Food Science and Technology, University of Nebraska-Lincoln, ⁷University of Nebraska-Lincoln, ⁸Department of Food Science and Technology, University of Nebraska-Lincoln, ⁹School of Biological Sciences, University of Nebraska-Lincoln

9:45 a.m. **Nutritional Physiology and Microbiome Break**

10:00 a.m. **Early weaning in pigs induces long-term alterations in intestinal nutrient transporter function and expression partially via beta adrenergic enteric neural receptors**

Yihang Li ¹, Karina Matos ², Adam Moeser ³, Mrigendra Rajput ⁴

¹University of Delaware, ²University of Puerto Rico, ³Michigan State University, ⁴Arkansas Tech University

10:15 a.m. **Performance and febrile response of nursery pigs to a porcine reproductive and respiratory syndrome virus challenge**

Nicholas K. Gabler ¹, Emma T. Helm ², Jessica Jasper ³, Blaire Todd ⁴

¹Department of Animal Science, College of Agriculture and Life Sciences, Iowa State University, ²Iowa State University, ³Iowa State University, ⁴Iowa State University

10:30 a.m. **Effects of continuously infusing glucose or casein at the terminal ileum on biomarkers of metabolism and intestinal morphology in growing pigs**

Megan A. Abeyta ¹, Jesus A. Acosta ², Mohmmad Al-Qaisi ³, Lance H. Baumgard ⁴, Brady M. Goetz ⁵, Erin A. Horst ⁶, Samantha Lei ⁷, Edith J. Mayorga ⁸, Carrie S. McCarthy ⁹, John F. Patience ¹⁰

¹Iowa State University, ²Dept. of Animal Science, Iowa State University, ³Iowa State University, ⁴Iowa State University, ⁵Iowa State University, ⁶Iowa State University, ⁷Iowa State University, ⁸Iowa State University, ⁹Iowa State University, ¹⁰Dept. of Animal Science, Iowa State University

10:45 a.m. **An in vivo model to investigate the effects of host stress and Salmonella typhimurium infection on nursery pigs**

Eric R. Burrough ¹, Nicholas K. Gabler ², Emma T. Helm ³

¹Iowa State University, ²Department of Animal Science, College of Agriculture and Life Sciences, Iowa State University, ³Iowa State University

11:00 a.m. **Early life fecal microbiome transplantation can enhance growth and performance in neonatal dairy calves**

Johan S. Osorio ¹, Fernanda Rosa ², Erminio Trevisi ³

¹South Dakota State University, ²South Dakota State University, ³Universita Cattolica del Sacro Cuore

Growth, Development, Muscle Biology and Meat Science Symposium: Industry Views on Meat Science Research Needs

Chair:

8:30 AM - 10:05 AM

216

8:30 a.m. **Growth, Development, Muscle Biology and Meat Science Symposium: Industry Views on Meat Science Research Needs Introduction**

8:55 a.m. **Research Needs for the Development of the Pork Industry**

Saskia Bloemhof ¹, Brandon Fields ², Rob Fitzgerald ³, Neal Matthews ⁴, Andrzej Sosnicki ⁵

¹PIC, ²Pig Improvement Company, Inc., ³PIC, ⁴PIC, ⁵PIC

9:15 a.m. **Developing Industry-Relevant Academic Research Programs in Meat Science**

Devin Gredell ¹, David McKenna ², Heather Rode ³

¹Tyson Fresh Meats, Inc., ²Tyson Fresh Meats, Inc., ³Tyson Fresh Meats, Inc.

9:35 a.m. **Roger Johnson Talk**
Roger Johnson¹
1

9:55 a.m. **Growth, Development, Muscle Biology and Meat Science Symposium:
Industry Views on Meat Science Research Needs Panel**

**Physiology III: Advancing reproductive techniques to Meet the World Demand for
Food II**

Chair:

8:30 AM - 11:45 AM

207

8:30 a.m. **Physiology III: Advancing reproductive techniques to Meet the World
Demand for Food II Introduction**

8:35 a.m. **How reproductive management technologies will shape the dairy
industry 50 years from now.**

Jack H. Britt¹

¹North Carolina State University, Raleigh NC

9:10 a.m. **Improving efficiency of embryo transfer (ET) programs by optimizing
fertility and management of recipients.**

Luciana Carrenho-Sala¹, Meliton Fosada², Alvaro Garcia-Guerra³, Juan F. Moreno⁴,
Rodrigo V. Sala⁵, Milo Wiltbank⁶
¹ST Genetics, Volms Farm, ²ST Genetics, Volms Farm, ³The Ohio State University, ⁴ST
Genetics, ⁵ST Genetics, Volms Farm, ⁶University of Wisconsin - Madison

9:45 a.m. **Physiology III: Advancing reproductive techniques to Meet the World
Demand for Food II Break**

10:00 a.m. **Development of Fertility Programs to Achieve High 21-day Pregnancy
Rates in High-Producing Dairy Cows**

Paulo Carvalho¹, Paul Fricke², Milo Wiltbank³

¹University of Wisconsin - Madison, ²University of Wisconsin - Madison, ³University of
Wisconsin - Madison

10:35 a.m. **Factors influencing pregnancy loss in lactating dairy cows**

Joao Paulo Martins¹, Emily Middleton², Thaina MInela³, James Richard. Pursley⁴

¹U of Wisconsin, ²Michigan State University, ³Michigan State University, ⁴Michigan State
University

11:10 a.m. **Expanding use of fixed-time artificial insemination in beef heifers and
cows through improved strategies to manage estrus and ovulation.**

David J. Patterson¹, Jordan M. Thomas²

¹University of Missouri, ²Animal Science, University of Missouri

Nonruminant Nutrition Symposium: Nursery Pig Nutrition and Health

Chair:

8:30 AM - 12:00 PM

Grand Ballroom South

8:30 a.m. **Nonruminant Nutrition Symposium: Nursery Pig Nutrition and Health Introduction**

8:35 a.m. **Common nutritional and infectious health challenges in nursery pigs**

Eric R. Burrough¹, Nicholas K. Gabler²

¹Iowa State University, ²Department of Animal Science, College of Agriculture and Life Sciences, Iowa State University

9:05 a.m. **Negative Impacts of Early Weaning on Lifelong Gut Health in the Pig.**

Yihang Li¹, Adam Moeser², Mrigendra Rajput³, Kyan Thelen⁴

¹University of Delaware, ²Michigan State University, ³Arkansas Tech University, ⁴Michigan State University

10:05 a.m. **Pathogen shedding in feces of nursery swine**

Elaine Berry¹, William T. Oliver², James E. Wells³

¹USDA ARS, ²USDA, ARS, USMARC, ³Meat Animal Research Center, Clay Center, NE 68933,

10:35 a.m. **Nonruminant Nutrition Symposium: Nursery Pig Nutrition and Health Break**

10:50 a.m. **Role of fiber in promoting health in nursery pigs**

Eduardo Beltranena¹, Janelle M. Fouhse², Michael G. Gänzle³, Charlotte Maria Elisabeth. Heyer⁴, Felina Tan⁵, Thavaratnam Vasanthan⁶, Ruurd T. Zijlstra⁷

¹Alberta Agriculture and Forestry, ²University of Alberta, ³University of Alberta, ⁴University of Alberta, ⁵University of Alberta, ⁶University of Alberta, ⁷Department of Agricultural, Food and Nutritional Science, University of Alberta, University of Alberta

11:20 a.m. **Beyond the gut: Systemic effects of the swine gut microbiome**

Andres Gomez¹

¹University of Minnesota

11:50 a.m. **Nonruminant Nutrition Symposium: Nursery Pig Nutrition and Health Panel**

David Schingoethe Symposium

Chair:

8:30 AM - 12:05 PM

210

8:30 a.m. **David Schingoethe Symposium Introduction**

8:35 a.m. **Fat metabolism and utilization in growing dairy calves and heifers: What do we know and what still needs to be researched?**

Jill L. Anderson¹, Rhea D. Lawrence², Karla Rodriguez-Hernandez³, Chelsea R.

Schossow⁴, Nirosh D. Senevirathne⁵

¹SDSU, ²SDSU, ³CIRNOC-INIFAP, ⁴SDSU, ⁵SDSU

9:20 a.m. **Feedstuff fatty acid content, variation, techniques and implications on practical animal nutrition**

Cliff Ocker¹

¹Rock River Laboratory, Inc

10:05 a.m. **David Schingoethe Symposium Break**

10:20 a.m. **Maternal supply of methionine during late-pregnancy alters in utero and neonatal development, hepatic one-carbon metabolism, and innate immune response in Holstein calves**

A S. Alharti ¹, Michael A. Ballou ², Fernanda Batistel ³, Juan Loo ⁴, X Y. Pan ⁵, Claudia Parys ⁶, Erminio Trevisi ⁷

¹University of Illinois- Urbana Champaign, ²Texas Tech University, ³University of Illinois Urbana-Champaign, ⁴, ⁵University of Illinois Urbana-Champaign, ⁶Evonik Nutrition & Care GmbH, ⁷Universita Cattolica del Sacro Cuore

10:50 a.m. **Role of fatty acid nutrition in milk fat synthesis**

Adam L. Lock ¹

¹Michigan State University

11:35 a.m. **DIET STARCH CONCENTRATION AND STARCH FERMENTABILITY AFFECT ENERGY INTAKE AND PRODUCTION OF DAIRY COWS DURING THE POSTPARTUM PERIOD**

Rodrigo Albornoz ¹, Michael Allen ²

¹Agriculture Victoria Research, ²Michigan State University

Animal Behavior, Welfare and Housing II

Chair:

10:00 AM - 11:00 AM

201

10:00 a.m. **A Field Study to Investigate the Effect of Zuprevo Administered Alone or in Combination with Banamine Transdermal on the Health and Well-Being of Transported Feedlot Calves on Arrival at the Feedlot**

Angela Baysinger ¹, Dale Blasi ², Johann Coetzee ³, John Hutcheson ⁴, Katie Kleinhenz ⁵, Michael Kleinhenz ⁶, Miriam S. Martin ⁷, Timothy Parks ⁸, Emily Reppert ⁹

¹Merck Animal Health, ²Kansas State University, ³Kansas State University College of Veterinary Medicine, ⁴Merck Animal Health, ⁵Kansas State University College of Veterinary Medicine, ⁶Kansas State University College of Veterinary Medicine, ⁷Kansas State University College of Veterinary Medicine, ⁸Merck Animal Health, ⁹Kansas State University College of Veterinary Medicine

10:15 a.m. **Behavioral and stress responses to feeding frequency in pregnant sows under isocaloric conditions**

S. K. Baidoo ¹, J. Cairns ², Q Huang ³, M. C. Keyes ⁴, S. H. Lee ⁵, Hayford Manu ⁶, D Pangani ⁷

¹University of Minnesota, ²Remote Insights, ³University of Minnesota, ⁴Remote Insights, ⁵University of Minnesota, ⁶University of Minnesota, ⁷University of Minnesota

10:30 a.m. **Use of pressure mat gait analysis in measuring pain following normal parturition in dairy cows**

Michael Burchard ¹, Johann Coetzee ², Patrick Gorden ³, Michael Kleinhenz ⁴, Joshua Ydstie ⁵

¹Iowa State University College of Veterinary Medicine, ²Kansas State University College of Veterinary Medicine, ³Iowa State University College of Veterinary Medicine, ⁴Kansas State

University College of Veterinary Medicine, ⁵Iowa State University College of Veterinary Medicine

10:45 a.m. **A multimodal approach for piglet pain management after tail docking**

Patricia Turner ¹, Abbie V. Viscardi ²

¹Charles River Laboratories, ²Kansas State University

Nonruminant Nutrition: Amino Acids

Chair:

10:00 AM - 11:15 AM

213

10:00 a.m. **Bioavailability of L-Methionine in comparison to DL-Methionine for nitrogen retention of weaned and growing pigs**

Nei A. A. Barbosa ¹, Raphael P. Caetano ², Paulo H. R. F. Campos ³, Alicia Z. Fraga ⁴, Jaqueline P. Gobi ⁵, Luciano Hauschild ⁶, John K. Htoo ⁷, Luan S. Santos ⁸, Welex C. Silva ⁹, Alini M. Veira ¹⁰

¹Evonik Degussa Brasil, ²São Paulo State University, ³Universidade Federal de Viçosa, ⁴São Paulo State University, ⁵São Paulo State University, ⁶São Paulo State University, ⁷Evonik Nutrition & Care GmbH, ⁸São Paulo State University, ⁹São Paulo State University, ¹⁰São Paulo State University

10:15 a.m. **Determining high-lysine sorghum amino acid digestibility and the effects on nursery pig performance**

Joel M. DeRouchey ¹, Steve S. Dritz ², Charmaine D. Espinosa ³, Robert D. Goodband ⁴, Hans H. Stein ⁵, Lori L. Thomas ⁶, Mike D. Tokach ⁷, Jason C. Woodworth ⁸

¹Kansas State University, ²Kansas State University, ³University of Illinois at Urbana-Champaign, ⁴Kansas State University, ⁵University of Illinois at Urbana-Champaign, ⁶Kansas State University, ⁷Kansas State University, ⁸Kansas State University

10:30 a.m. **Effects of dietary leucine concentration on branched-chain amino acid metabolism in growing pigs**

Woong B. Kwon ¹, Aude Simongiovanni ², Hans H. Stein ³, Kostas Syriopoulos ⁴, Kevin J. Touchette ⁵, Anna Wessels ⁶

¹University of Illinois at Urbana-Champaign, ²Ajinomoto Animal Nutrition Europe, ³University of Illinois at Urbana-Champaign, ⁴Ajinomoto Animal Nutrition Europe, ⁵AJINOMOTO ANIMAL NUTRITION NORTH AMERICA, INC., ⁶Freie Universität Berlin

10:45 a.m. **Digestibility of amino acids in hydrolyzed feather meal, flash dried poultry protein, poultry meal, and meat and bone meal fed to broiler chickens and pigs**

Olayiwola Adeola ¹, Ariane Helmbrecht ², John K. Htoo ³, Victor Naranjo ⁴, Chan Sol Park ⁵

¹Purdue University, ²Evonik Nutrition & Care GmbH, ³Evonik Nutrition & Care GmbH, ⁴Evonik Nutrition & Care GmbH, ⁵Purdue University

11:00 a.m. **Direct vs. difference method to determine amino acid digestibility in ingredients fed to pigs**

Maryane S. Faria de Oliveira ¹, John K. Htoo ², Hans H. Stein ³

¹University of Illinois at Urbana-Champaign, ²Evonik Nutrition & Care GmbH, ³University of Illinois at Urbana-Champaign

Poster Session V

12:45 PM - 1:30 PM

CenturyLink Grand Ballroom Foyer

12:45 p.m. **Assessment of lameness in gilts and barrows using gait score, force-plate, hoof hardness and hoof lesions**

Juxing Chen ¹, Chelsie Foran ², Tom Hampton ³, Ashley LaMontagne ⁴, Ping Ren ⁵, Mercedes Vazquez-Anon ⁶, Karen Wedekind ⁷

¹Novus International, Inc, ²Novus International, Inc, ³Novus International, Inc, ⁴Novus International, Inc, ⁵Novus International, Inc, ⁶Novus International, Inc, ⁷Novus International, Inc

12:45 p.m. **Effect of drying and/or warming piglets at birth on rectal temperature over the first 24 hours after birth.**

Stephan Alencar ¹, Katie Brown ², Naomi Cooper ³, Michael Ellis ⁴, Caleb M. Shull ⁵, Andres Tolosa ⁶, Katherine D. Vande Pol ⁷

¹Doutorando na Universidade Federal de Mato Grosso do Sul, ²The Maschhoffs, ³University of Illinois, ⁴University of Illinois, ⁵The Maschhoffs, ⁶University of Illinois, ⁷University of Illinois

12:45 p.m. **Effect of yeast bioactive compounds on the reproductive performance of sows**

Gabriel Arruda ¹, Jéssica Barbosa ², Vinícius S. Cantarelli ³, Rhuan Chaves ⁴, Ricardo M. Garcia ⁵, Eduardo Oliveira ⁶, Maíra Resende ⁷

¹Federal University of Lavras, ²Federal University of Lavras, ³Federal University of Lavras, ⁴Federal University of Lavras, ⁵PURDUE UNIVERSITY, ⁶NutriQuest, ⁷Federal University of Lavras

12:45 p.m. **Effects of a Bacillus-based probiotic on sow and litter performance, fecal consistency, and fecal microflora**

Mariana Boscato Menegat ¹, Michaela B. Braun ², Jim Bryte ³, Joel M. DeRouchey ⁴, Steve S. Dritz ⁵, Robert D. Goodband ⁶, Kiah M. Gourley ⁷, Mike D. Tokach ⁸, Jason C. Woodworth ⁹

¹Kansas State University, ²Kansas State University, ³Quality Technology International, Inc., ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University, ⁸Kansas State University, ⁹Kansas State University

12:45 p.m. **Effects of Cordyceps Mushroom Powder on Nursery Pig Performance**

Clayton S. Chastain ¹, Jim L. Nelssen ², Jorge Y P. Palencia ³, Brian T. Richert ⁴, Jacob A. Richert ⁵, Morgan T. Thayer ⁶

¹Purdue University, ²Kansas State University, ³Universidade Federal de Lavras – Brazil, ⁴Purdue University, ⁵Kansas State University, ⁶Purdue University

12:45 p.m. **Effects of dietary coated omega-3 supplementation on growth performance, nutrient digestibility, blood profiles, and fatty acid composition in lactating sows and suckling piglets**

Jemin Ahn ¹, In Ho Kim ², Huan Wang ³

¹Dankook Univ., ²Dankook Univ., ³Dankook Univ.

12:45 p.m. **Effects of different fat sources and vitamin E levels on tissue tocopherol concentration, antioxidant status, and fatty acid composition in the backfat of pigs grown to 150 kg**

M. J. Azain¹, Young Dal Jang², Merlin D. Lindemann³, H. J. Monegue⁴, G. K. Rentfrow⁵, Ding Wang⁶

¹University of Georgia, ²University of Wisconsin River Falls, ³University of Kentucky, ⁴University of Kentucky, ⁵University of Kentucky, ⁶University of Kentucky

12:45 p.m. **Effects of different fat sources and vitamin E levels/isoforms on growth performance, antioxidant status, and fatty acid profile in the liver of pigs grown to 150 kg**

M. J. Azain¹, Young Dal Jang², Merlin D. Lindemann³, H. J. Monegue⁴, G. K. Rentfrow⁵, Ding Wang⁶

¹University of Georgia, ²University of Wisconsin River Falls, ³University of Kentucky, ⁴University of Kentucky, ⁵University of Kentucky, ⁶University of Kentucky

12:45 p.m. **Effects of fermented soybean meal on growth performance, nutrient digestibility, blood profile and fecal microflora in weaning pigs**

Jemin Ahn¹, Zhenyu Ding², In Ho Kim³

¹Dankook Univ., ²Dankook Univ., ³Dankook Univ.

12:45 p.m. **Effects of fortified yeast cell wall extract on growth and health of newly weaned pigs under chronic dietary challenges of aflatoxin and deoxynivalenol**

Sung Woo Kim¹, Debora Muratori Holanda², Alexandros Yiannikouris³

¹North Carolina State University, ²North Carolina State University, ³Alltech Inc.

12:45 p.m. **Effects of increasing duration of feeding high dietary lysine and energy prior to farrowing on sow and litter performance under commercial conditions**

Joel M. DeRouchey¹, Steve S. Dritz², Brent Frederick³, Robert D. Goodband⁴, Kiah M. Gourley⁵, Analicia J. Swanson⁶, Mike D. Tokach⁷, Jason C. Woodworth⁸

¹Kansas State University, ²Kansas State University, ³Christensen Farms, ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University, ⁸Kansas State University

12:45 p.m. **Effects of increasing iron dosage in newborn pigs on preweaning performance and hematological criteria**

Joel M. DeRouchey¹, Steve S. Dritz², Robert D. Goodband³, Andrew Holtcamp⁴, Mike D. Tokach⁵, Hayden E. Williams⁶, Jason C. Woodworth⁷

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Ceva Animal Health, LLC., ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University

12:45 p.m. **Effects of increasing iron dosage in newborn pigs on subsequent nursery performance and hematological criteria**

Joel M. DeRouchey¹, Steve S. Dritz², Robert D. Goodband³, Andrew Holtcamp⁴, Mike D. Tokach⁵, Hayden E. Williams⁶, Jason C. Woodworth⁷

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Ceva Animal Health, LLC., ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University

12:45 p.m. **Effects of insoluble fiber source (cellulose or distillers dried grains with solubles) on growth performance of nursery pigs**

Matt W. Allerson¹, Henrique S. Cemin², Joel M. DeRouchey³, Steve S. Dritz⁴, Robert D. Goodband⁵, Mike D. Tokach⁶, Jason C. Woodworth⁷

¹Holden Farms Inc., ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University

12:45 p.m. **Effects of isoquinoline alkaloids on growth performance and blood characteristics of weanling pigs fed corn-soybean meal diets**

Valeria Artuso-Ponte ¹, Carly Rundle ², Hans H. Stein ³

¹Phytobiotics Futterzusatzstoffe GmbH, ²University of Illinois, ³University of Illinois at Urbana-Champaign

12:45 p.m. **Effects of non-animal protein in nursery diets on wean to finish pig performance and carcass characteristics**

S. K. Baidoo ¹, L. Hanson ², Q. Huang ³, Hayford Manu ⁴, D Pangen ⁵

¹University of Minnesota, ²university of Minnesota, ³University of Minnesota, ⁴University of Minnesota, ⁵University of Minnesota

12:45 p.m. **Effects of plasma protein on growth performance and intestinal health of weaned pigs**

Xi Lin ¹, Gabriela E. Martinez Padilla ², Kory Moran ³, Jack Odle ⁴, Ysenia Victoria Silva-Guillen ⁵, Eric van Heugten ⁶

¹Department of Animal Science, North Carolina State University, ²Department of Animal Science, North Carolina State University, ³Department of Animal Science, North Carolina State University, ⁴Department of Animal Science, North Carolina State University, ⁵Department of Animal Science, North Carolina State University, ⁶Department of Animal Science, North Carolina State University

12:45 p.m. **Effects of protease on growth performance, fecal gas emission of 25- to 55-kg pigs fed low or high density diets**

Roger Campbell ¹, Jinho Cho ², Seung-Yeol Cho ³, In Ho Kim ⁴, Ludovic Lahaye ⁵, Glenmer Tactacan ⁶

¹RG CAMPBELL ADVISORY, ²Chungbuk National University, ³Eugenebio, ⁴Dankook Univ., ⁵Jefo, ⁶Jefo

12:45 p.m. **Effects of Soybean Meal and Net Energy Level on Nursery Pig Performance**

Brittany Carrender ¹, Kyle F. Coble ², Joel M. DeRouchey ³, Steve S. Dritz ⁴, Amanda J. Gerhart ⁵, Robert D. Goodband ⁶, Cassandra K. Jones ⁷, Mike D. Tokach ⁸, Hayden E. Williams ⁹

¹JBS Live Pork, ²JBS Live Pork, ³Kansas State University, ⁴Kansas State University, ⁵JBS Live Pork, ⁶Kansas State University, ⁷Kansas State University, ⁸Kansas State University, ⁹Kansas State University

12:45 p.m. **Effects of space allowance and marketing strategy on growth performance of pigs raised to heavy market weights**

Matt W. Allerson ¹, Dustin D. Boler ², Joel M. DeRouchey ³, Anna C. Dilger ⁴, Steve S. Dritz ⁵, Brandon Fields ⁶, John M. Gonzalez ⁷, Robert D. Goodband ⁸, Annie B. Lerner ⁹, Travis G. O'Quinn ¹⁰, Hannah E. Price ¹¹, Emily A. Rice ¹², Steven D. Shackelford ¹³, Mike D. Tokach ¹⁴, Jason C. Woodworth ¹⁵

¹Holden Farms Inc., ²University of Illinois Urbana-Champaign, ³Kansas State University, ⁴University of Illinois Urbana-Champaign, ⁵Kansas State University, ⁶Pig Improvement Company, Inc., ⁷Kansas State University, ⁸Kansas State University, ⁹Kansas State University, ¹⁰Kansas State University, ¹¹University of Illinois, Urbana-Champaign, ¹²Kansas State University, ¹³USDA, Meat Animal Research Center, ¹⁴Kansas State University, ¹⁵Kansas State University

12:45 p.m. **Effects of storing three phytase sources for 90 days under high temperature and humidity on phytase stability, growth performance, and bone mineralization of nursery pigs**

Jon R. Bergstrom¹, Mariana Boscato Menegat², Joel M. DeRouchey³, Steve S. Dritz⁴, Robert D. Goodband⁵, Kiah M. Gourley⁶, Mike D. Tokach⁷, Carine M. Vier⁸, Jason C. Woodworth⁹

¹DSM Nutritional Products North America, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University, ⁸Kansas State University, ⁹Kansas State University

12:45 p.m. **Effects of the protein level on growth performance and carcass grading in fattening pig fed ad libitum.**

Hervé Fortune¹, Claire Launay², Francesc Payola³, Arnaud Samson⁴, Eric Schetelat⁵

¹Prisma/NEOVIA, ²NEOVIA, ³SETNA/NEOVIA, ⁴NEOVIA, ⁵INZO/NEOVIA

12:45 p.m. **Effects of two products containing tiamulin hydrogen fumarate on drinking water intake of weaned pigs**

Deb Amodie¹, Lucina Galina², Marnie Mellencamp³, Adam Mueller⁴, Thomas Short⁵, Kimberly A. Vonnahme⁶

¹Zoetis, ²Zoetis, ³Zoetis, ⁴Swine Services Unlimited, Inc., ⁵Zoetis, ⁶Zoetis

12:45 p.m. **Effects of varying ratio of L-Arginine and Lysine on the performance of sows and their litters**

Jemin Ahn¹, In Ho Kim², Yi Yang³

¹Dankook Univ., ²Dankook Univ., ³Dankook Univ.

Bentley Lecture and Lunch

Chair:

12:50 PM - 1:40 PM

Grand Ballroom North

12:50 p.m. **Long-term immune and metabolic consequences of a disrupted early life microbiota**

Benjamin P. Willing¹

¹University of Alberta

Ruminant Nutrition: Feedlot: Nutrition and Management

Chair:

1:30 PM - 3:30 PM

213

1:30 p.m. **Impact of bunk management strategy on animal performance, carcass characteristics, and hydrogen sulfide gas concentrations in steers fed modified distillers grains with solubles**

Leslie Lekatz¹, Bryan Neville²

¹University of Minnesota Crookston, ²North Dakota State University

1:45 p.m. **Evaluation of reimplant timing with Revalor-200 on steer performance and carcass characteristics**

Bradley M. Boyd¹, Caitlin A. Coulson², Grant I. Crawford³, Galen E. Erickson⁴, Henry Hilscher⁵, James C. MacDonald⁶, Brandon L. Nuttelman⁷

¹University of Nebraska - Lincoln, ²University of Nebraska - Lincoln, ³Merck Animal Health, ⁴Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,, ⁵University of Nebraska - Lincoln, ⁶University of Nebraska - Lincoln, ⁷Merck Animal Health

2:00 p.m. **A Comparison of Synovex ONE alone to Synovex Choice followed by Synovex Plus as Implant Strategies for Finishing Heifers**

Sheri Bundy ¹, Ralph Cleale ², Robert Cooper ³, Galen E. Erickson ⁴, D.J. Jordon ⁵, Elizabeth Schumacher ⁶, Tony Scott ⁷, Gary Sides ⁸

¹Cattlemen's Nutrition Services, LLC, ²Zoetis, ³Cattlemen's Nutrition Services, LLC, ⁴Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,, ⁵Cattlemen's Nutrition Services, LLC, ⁶University of NE - Lincoln, ⁷Cattlemen's Nutrition Services, LLC, ⁸Zoetis

2:15 p.m. **Effects of high protein DDGS in SFC or DRC-based diets on nutrient digestibility and ruminal fermentation characteristics**

Galen E. Erickson ¹, Mitch Norman ², Lauren Ovinge ³, Kaylee Wheeler ⁴

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

2:30 p.m. **Impact of Corn Silage Level on Finishing Cattle Nutrient Digestion, pH Characteristics, and Feeding Behavior**

Galen E. Erickson ¹, Melissa L. Jolly-Breithaupt ², James C. MacDonald ³, Andrea K. Watson ⁴, Hannah C. Wilson ⁵

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

2:45 p.m. **Identifying Optimal Levels of Silage Used as a Roughage Source in Finishing Beef Cattle Performance and Liver Abscess Rate**

Bradley M. Boyd ¹, Zachary E. Carlson ², Galen E. Erickson ³, Henry Hilscher ⁴, James C. MacDonald ⁵, Andrea K. Watson ⁶, Hannah C. Wilson ⁷

¹University of Nebraska - Lincoln, ²University of Nebraska - Lincoln, ³Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,, ⁴University of Nebraska - Lincoln, ⁵University of Nebraska - Lincoln, ⁶University of Nebraska - Lincoln, ⁷University of Nebraska - Lincoln

3:00 p.m. **Effect of corn stalk inclusion rate on performance and rumination behavior in beef steers**

Jenny S. Jennings ¹, Ty E. Lawrence ², Catherine L. Lockard ³

¹Texas A&M AgriLife Research, ²West Texas A&M University, ³Texas A&M AgriLife Research

3:15 p.m. **Optimizing sugar inclusion in high roughage diets for growing cattle**

Alfredo DiCostanzo ¹, Allison VanDerWal ², Josh Zeltwanger ³

¹University of Minnesota, ²University of Minnesota, ³University of Minnesota

Nonruminant Nutrition: Feed Additives I

Chair:

1:30 PM - 3:45 PM

203/204

1:30 p.m. **Energy (ME)-releasing efficacy of graded levels of 6-phytase, Natuphos® E, and a NSPase, Natugrain® TS, in 35 kg pigs fed corn/soy diets**

Michael Coelho ¹, Robert Jones ², Frank Parks ³

¹BASF, ²Integrated Farm Research, Inc., ³Integrated Farm Research, Inc,

1:45 p.m. **Impact of heat stress and antioxidant supplements in feed or drinking water on growth, intestinal morphology, and oxidative and immune status in growing pigs**

Consuelo Arellano ¹, R. Dean Boyd ², Gabriela E. Martinez Padilla ³, Ysenia Victoria Silva-Guillen ⁴, Eric van Heugten ⁵, Jeffrey Wiegert ⁶

¹Department of Statistics, North Carolina State University, ²The Hanor Company, LLC, ³Department of Animal Science, North Carolina State University, ⁴Department of Animal Science, North Carolina State University, ⁵Department of Animal Science, North Carolina State University, ⁶Department of Animal Science, North Carolina State University

2:00 p.m. **The effect of feeding Ambitine™ Feed Additive on late finishing pig performance.**

Benjamin Bass ¹, Stacie Crowder ², Brenda DeRodas ³, Theodore Karnezos ⁴, Terry Weeden ⁵

¹PMI, ²Purina Animal Nutrition, ³Purina Animal Nutrition, ⁴Purina Animal Nutrition, ⁵Purina Animal Nutrition

2:15 p.m. **Growth performance and nutrient digestibility of multi-enzyme-supplemented low-energy and -amino acid diets for growing and finishing pigs**

Pierre Cozannet ¹, Jimena Ibagón ², Kevin S. Jerez Bogota ³, Maamer Jlali ⁴, Aurélie Preynat ⁵, Christian Sanchez ⁶, Tofuko A. Woyengo ⁷

¹Adisseo France S.A.S., Center of Expertise and Research in Nutrition, ²SOUTH DAKOTA STATE UNIV, ANIMAL & RANGE SCIENCES, ³SOUTH DAKOTA STATE UNIV, ANIMAL & RANGE SCIENCES, ⁴Adisseo France S.A.S., Center of Expertise and Research in Nutrition, ⁵Adisseo France S.A.S., Center of Expertise and Research in Nutrition, ⁶SOUTH DAKOTA STATE UNIV, ANIMAL & RANGE SCIENCES, ⁷South Dakota State University

2:30 p.m. **Nonruminant Nutrition: Feed Additives I Break**

2:45 p.m. **A Novel Find of a Feed NSPase Enzyme, Natugrain® TS, Reducing Finish Pig Hemorrhagic Bowel Syndrome Mortality**

Michael Coelho ¹, Robert Jones ², Frank Parks ³

¹BASF, ²Integrated Farm Research, Inc., ³Integrated Farm Research, Inc,

3:00 p.m. **Dietary astragalus membranaceus and codonopsis pilosula extracts supplementation increases growth performance and FMD antibody titers in growing-finishing pigs**

3:15 p.m. **Effects of copper hydroxychloride and increasing concentrations of dietary fat on growth performance, total tract endogenous loss of fat, and apparent total tract digestibility of fat by growing pigs**

Charmaine D. Espinosa ¹, Robert Scott Fry ², Matthew Kocher ³, Hans H. Stein ⁴

¹University of Illinois at Urbana-Champaign, ²Micronutrients, Inc., ³Micronutrients, Inc., ⁴University of Illinois at Urbana-Champaign

Animal Behavior, Housing and Well-Being/Nonruminant Nutrition Symposium: New and High-Tech: Technologies and Their Application to the Animal Industry
Chair:

1:45 PM - 3:50 PM
Grand Ballroom South

1:45 p.m. **Animal Behavior, Housing and Well-Being/Nonruminant Nutrition Symposium: New and High-Tech: Technologies and Their Application to the Animal Industry Introduction**

1:50 p.m. **Using RFID in Animal Management and More**
Tami M. Brown-Brandl ¹
¹USDA-ARS-MARC

2:25 p.m. **Deep Frame-based tracking on nursery pigs**
Mateus Mittek ¹, Benny Mote ², Lance Perez ³, Eric Psota ⁴
¹University of Nebraska - Lincoln, ²University of Nebraska-Lincoln, ³University of Nebraska - Lincoln, ⁴University of Nebraska - Lincoln

3:00 p.m. **Biosensors - New Frontiers in Animal Welfare**
Suresh Neethirajan ¹
¹GE

3:35 p.m. **Animal Behavior, Housing and Well-Being/Nonruminant Nutrition Symposium: New and High-Tech: Technologies and Their Application to the Animal Industry Panel**

Genetics, Genomics & Bioinformatics I

Chair:

1:45 PM - 4:00 PM
202

1:45 p.m. **The impact of putative causal variants and animal misidentification on genome-wide association studies for carcass traits in beef cattle.**

E. John Pollack ¹, Matthew L. Spangler ², Lindsay R. Upperman ³
¹University of Nebraska-Lincoln, ²Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,, ³University of Nebraska-Lincoln

2:00 p.m. **The impact of selective phenotyping and genotyping over generations in beef cattle**

Rodrigo Fagundes da Costa ¹, Fernando Flores Cardoso ², Fabyano Fonseca e Silva ³, Andrea Plotzki Reis ⁴, Matthew L. Spangler ⁵
¹Universidade Federal de Pelotas, ²EMBRAPA - CPPSul, ³University of Viçosa, ⁴University of Nebraska - Lincoln, ⁵Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,

2:15 p.m. **Re-ranking of estimated breeding values using different panel densities with ssGBLUP in broiler chickens**

Gerson Barreto Mourão ¹, Mônica Corrêa Ledur ², Gabriel Costa Monteiro Moreira ³, Luiz Lehmann Coutinho ⁴, Mayara Salvian ⁵, Matthew L. Spangler ⁶
¹University of Sao Paulo - ESALQ, ²Embrapa Suínos e Aves, ³University of Sao Paulo - ESALQ, ⁴University of Sao Paulo - ESALQ, ⁵University of Nebraska - Lincoln, ⁶Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,

2:30 p.m. **A comparison of clustering methods for cross-validation of genomic predictors when training on phenotypes or deregressed Estimated Breeding Values**

Johnna Baller¹, Jeremy T. Howard², Stephen Kachman³, Matthew L. Spangler⁴
¹University of Nebraska-Lincoln, ²Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA, ³University of Nebraska-Lincoln, ⁴Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,

2:45 p.m. **Genetics, Genomics & Bioinformatics I Break**

3:00 p.m. **Improved estimation of indirect social genetic effects in group-housed pigs by quantifying behavioral interactions**

Belcy Karine. Angarita Barajas¹, Rodolfo Cantet², Catherine Ernst³, Carly O'Malley⁴, Janice Siegford⁵, Juan P. Steibel⁶, Kaitlin E. Wurtz⁷

¹MICHIGAN STATE UNIVERSITY, ²Universidad de Buenos Aires, ³MICHIGAN STATE UNIVERSITY, ⁴MICHIGAN STATE UNIVERSITY, ⁵Michigan State University, ⁶MSU, ⁷Michigan State University

3:15 p.m. **Using 3D images and deep learning to predict feeder occupancy in grow-finish pigs**

Sarah K. Chewning¹, Junjie Han², Janice Siegford³, Juan P. Steibel⁴, Kaitlin E. Wurtz⁵

¹Michigan State University, ²Michigan State University, ³Michigan State University, ⁴MSU, ⁵Michigan State University

3:30 p.m. **The Genetic Basis of Natural Antibody Titers and Relationships with Disease Resilience in Pigs**

Carolyn Ashley¹, Yulu Chen², Jack C. M. Dekkers³, Michael Dyck⁴, Frederic Fortin⁵, John C.S. Harding⁶, Laura Laura⁷, Kyu-Sang Lim⁸, Graham S. Plastow⁹, Austin M. Putz¹⁰

¹University of Saskatchewan, ²Iowa State University, ³Department of Animal Science, Iowa State University, Ames, IA 50011, ⁴Livestock Gentec Centre, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Canada, ⁵Centre de développement du porc du Québec inc. (CDPQ), Quebec, Canada, ⁶Large Animal Clinical Sciences, University of Saskatchewan, Canada, ⁷Iowa State University, ⁸Iowa State University, ⁹Livestock Gentec Centre, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Canada, ¹⁰Department of Animal Science, Iowa State University, Ames, IA 50011

3:45 p.m. **Identification of QTL associated with antibody response to common infectious diseases in commercial sows**

PigGen Canada¹, Jack C. M. Dekkers², John C.S. Harding³, Benny Mote⁴, Leticia Pereira Sanglard⁵, Graham S. Plastow⁶, Nick V.L. Serão⁷, Philip Willson⁸

¹PigGen Canada, ²Department of Animal Science, Iowa State University, Ames, IA 50011, ³Large Animal Clinical Sciences, University of Saskatchewan, Canada, ⁴University of Nebraska-Lincoln, ⁵Iowa State University, ⁶Livestock Gentec Centre, Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, Canada, ⁷Iowa State University, ⁸University of Saskatchewan

Nonruminant Nutrition: Feed Additives III: Nursery

Chair:

1:45 PM - 4:00 PM

214

1:45 p.m. **Supplemental effects of whey permeate on growth performance and gut health of nursery pigs**

Ki Beom Jang¹, Sung Woo Kim², Jerry M. Purvis³

¹North Carolina State University, ²North Carolina State University, ³N. G. Purvis Farm Inc., Robbins, NC

2:00 p.m. **Effects of micro-encapsulated formula of organic acids and essential oils on performance and gut integrity of weaned piglets challenged with ETEC K88**

Jean-Christophe Bodin ¹, Zhengxiao He ², Ludovic Lahaye ³, Xiangshu Piao ⁴, Yetong Xu ⁵, Chengbo Yang ⁶, Jinxiao Zhang ⁷

¹Jefo, ²China Agricultural University, ³Jefo, ⁴China Agricultural University, ⁵China Agricultural University, ⁶University of Manitoba, ⁷Jefo

2:15 p.m. **Supplementation of Bacillus subtilis modified fecal microbiota of weaning pigs experimentally infected with pathogenic E. coli**

Cynthia Jinno ¹, Peng Ji ², Kwangwook Kim ³, Yanhong Liu ⁴, Elizabeth Maga ⁵, Minh Song ⁶

¹University of California, Davis, ²University of California, Davis, ³University of California, Davis, ⁴University of California, Davis, ⁵University of California, Davis, ⁶Chungnam National University

2:30 p.m. **Effects of Bacillus subtilis probiotics on growth performance, diarrhea, and fecal β -hemolytic coliforms of weaned pigs experimentally infected with an enterotoxigenic Escherichia coli**

Yijie He ¹, Cynthia Jinno ², Kwangwook Kim ³, Lauren Kovanda ⁴, Yanhong Liu ⁵, Xunde Li ⁶, Minh Song ⁷, Seijoo Yang ⁸

¹University of California, Davis, ²University of California, Davis, ³University of California, Davis, ⁴University of California, Davis, ⁵University of California, Davis, ⁶University of California, Davis, ⁷Chungnam National University, ⁸University of California, Davis

2:45 p.m. **Nonruminant Nutrition: Feed Additives III: Nursery Break**

3:00 p.m. **Effects of antibiotics on blood profiles in weanling pigs experimentally infected with a pathogenic E. coli**

Yijie He ¹, Cynthia Jinno ², Peng Ji ³, Kwangwook Kim ⁴, Yanhong Liu ⁵, Minh Song ⁶, Seijoo Yang ⁷

¹University of California, Davis, ²University of California, Davis, ³University of California, Davis, ⁴University of California, Davis, ⁵University of California, Davis, ⁶Chungnam National University, ⁷University of California, Davis

3:15 p.m. **Evaluation of different combinations of medium chain fatty acids and monolaurin as a dietary additive for nursery pigs**

Joel M. DeRouchey ¹, Steve S. Dritz ², Robert D. Goodband ³, Ashley Hartman ⁴, Aaron Jones ⁵, Denny McKilligan ⁶, Lori L. Thomas ⁷, Mike D. Tokach ⁸, Jason C. Woodworth ⁹

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Tech Mix, LLC, ⁶Tech Mix, LLC, ⁷Kansas State University, ⁸Kansas State University, ⁹Kansas State University

3:30 p.m. **Bioavailability of valine in a fermentation biomass product relative to the bioavailability in crystalline L-valine when fed to weanling pigs**

John E. Thomson ¹, Maryane S. Faria de Oliveira ², John K. Htoo ³, Caroline J. González-Vega ⁴, Hans H. Stein ⁵

¹Hamlet Protein, ²University of Illinois at Urbana-Champaign, ³Evonik Nutrition & Care GmbH, ⁴Evonik Nutrition & Care GmbH, ⁵University of Illinois at Urbana-Champaign

3:45 p.m. **Effect of sodium butyrate (SB) on growth performance and complete blood cell count in nursery pigs: Two facility study.**

Laia Blavi¹, Casey L. Bradley², Joshua Knapp³, Charles V. Maxwell⁴, Hannah Maxwell⁵, Hans H. Stein⁶, Tsung Cheng. Tsai⁷

¹University of Illinois at Urbana-Champaign, ²DSM Nutritional Products Inc., ³University of Arkansas - Fayetteville, Dale Bumpers College of Agriculture, Department of Animal Science, ⁴University of Arkansas - Fayetteville, ⁵University of Arkansas, ⁶University of Illinois at Urbana-Champaign, ⁷University of Arkansas - Fayetteville, Dale Bumpers College of Agriculture, Department of Animal Science

Nonruminant Nutrition: Sow Nutrition

Chair:

1:45 PM - 4:00 PM

211/212

1:45 p.m. Evaluation of soluble concentrated yeast product on sow and litter performance

Amanda Graham¹, Laura Greiner², Sangita Jalukar³, Brandon Knopf⁴, Robyn Thompson⁵
¹Carthage Innovative Swine Solutions, ²Carthage Innovative Swine Solutions, ³ARM & HAMMER ANIMAL AND FOOD PRODUCTION, ⁴Carthage Innovative Swine Solutions, ⁵Carthage Innovative Swine Solutions

2:00 p.m. Influence of β -mannanase in the lactation diet on sow and litter performance and subsequent wean-to-service interval

Emily K. Bruder¹, Gene G. Gourley², Sara K. Linneen³, Robert L. Payne⁴
¹Gourley Premium Pork, ²Gourley Research Group, ³Elanco Animal Health, ⁴Elanco Animal Health

2:15 p.m. Impact of hydroxy-selenomethionine supplementation during late gestation and lactation in sows on piglet immunocompetence.

Mickael Briens¹, Michele De Marco², Niel A. Karrow³, Ningya Li⁴, Huazhen Liu⁵, Zhijian Sun⁶

¹Adisseo France S.A.S., ²Adisseo France S.A.S., ³Department of Animal Biosciences, University of Guelph, ⁴College of Animal Science and Veterinary Medicine, Huazhong Agricultural University, ⁵College of Animal Science and Veterinary Medicine, Huazhong Agricultural University, ⁶College of Animal Science and Veterinary Medicine, Huazhong Agricultural University

2:30 p.m. Evaluation of feeding arginine in gestation and lactation on sow and litter performance

Cathy Boessen¹, Laura Greiner², Keith D. Haydon³, Brandon Knopf⁴, Robyn Thompson⁵
¹Carthage Innovative Swine Solutions, ²Carthage Innovative Swine Solutions, ³CJ America-Bio, Downers Grove, IL, ⁴Carthage Innovative Swine Solutions, ⁵Carthage Innovative Swine Solutions

2:45 p.m. Nonruminant Nutrition: Sow Nutrition Break

3:00 p.m. Supplementation of mint oil and yeast cell in lactation diets on the antioxidant status of the dam and performance of offspring during the suckling phase.

James L. Dunn¹, Lily P. Hernandez², Crystal L. Levesque³, Joel Wenninghoff⁴
¹ADM Animal Nutrition, ²South Dakota State University, ³South Dakota State University, ⁴ADM Animal Nutrition

3:15 p.m. Increased feeding level in peak lactation is an effective tool to control body weight loss in hyper prolific sows

Thomas S. Bruun ¹, Camilla K. Højgaard ², Anja V. Strathe ³

¹SEGES Danish Pig Research Centre, ²SEGES Danish Pig Research Centre and Aarhus University, ³University of Copenhagen

3:30 p.m. **Effects of soybean meal concentration in lactating sow diets on sow and litter performance**

Joel M. DeRouchey ¹, Steve S. Dritz ², Robert D. Goodband ³, Kiah M. Gourley ⁴, Mike D. Tokach ⁵, Jason C. Woodworth ⁶

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University

3:45 p.m. **Efficiency of standardized ileal digestible lysine utilization for whole body protein retention in pregnant gilts and sows during early and mid gestation.**

Jim Dunn ¹, John K. Htoo ², Crystal L. Levesque ³, Christian D. Ramirez-Camba ⁴, Ryan S. Samuel ⁵, Kevin J. Touchette ⁶

¹ADM, ²Evonik Nutrition & Care GmbH, ³South Dakota State University, ⁴South Dakota State University, ⁵South Dakota State University, ⁶AJINOMOTO ANIMAL NUTRITION NORTH AMERICA, INC.

Swine Translational

Chair:

1:45 PM - 4:30 PM

201

1:45 p.m. **An applied approach to studying heat stress: Effects of cyclic heat and zinc supplementation on body temperature, gut health, and pork quality.**

Alan W. Duttlinger ¹, S M. Elly ², Julie A. Feldpausch ³, Yuan H. B. Kim ⁴, Kayla M. Mills ⁵, John S. Radcliffe ⁶, Zach Rambo ⁷, Brian T. Richert ⁸

¹Purdue University, ²Purdue University, ³Purdue University, ⁴Purdue University, ⁵Purdue University, ⁶Purdue University, ⁷ZinPro Corporation, ⁸Purdue University

2:15 p.m. **The effect of OvuGel® administered to weaned sows at proestrus or estrus on reproductive performance.**

Lidia S. Arend ¹, Steven G. Buysse ², Mike E. Johnston ³, Robert V. Knox ⁴, Amanda M. Minton ⁵, Clint R. Schwab ⁶, Caleb M. Shull ⁷, Stephen K. Webel ⁸

¹University of Illinois, ²United Animal Health, ³United Animal Health, ⁴University of Illinois, ⁵The Maschhoffs, ⁶The Maschhoffs, ⁷The Maschhoffs, ⁸United Animal Health

2:30 p.m. **Effect of shelf setting of a wet/dry feeder on growth performance of finishing pigs.**

Mike J. Boerboom ¹, Julia P. Holen ², Lee J. Johnston ³, Tim A. Kerkaert ⁴, Jeffrey S. Knott ⁵, Molly R. Renken ⁶

¹Boerboom Ag Resources, ²University of Minnesota, ³University of Minnesota, ⁴Boerboom Ag Resources, ⁵Ideal Animal Nutrition, ⁶Ideal Animal Nutrition

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

3:00 p.m. **Evaluation of growth performance and physiology of nursery pigs fed deoxynivalenol (DON) contaminated feed supplemented with commercial feed additives (CFA)**

Quincy Buis ¹, Lee-Anne Huber ², Elijah Kiarie ³, Youngji Rho ⁴, David Trott ⁵, Conor Voth ⁶

¹Wallenstein Feed & Supply Ltd., Wallenstein, ²University of Guelph, ³University of Guelph, ⁴University of Guelph, ⁵Wallenstein Feed & Supply Ltd., Wallenstein, ⁶University of Guelph

3:15 p.m. **Optimal dietary lysine for growth development of gilts until first parity**
R. Dean Boyd ¹, Ashley DeDecker ², Clay A. Lents ³, Xochitl Martinez ⁴, Kenneth J. Stalder ⁵, China Supakorn ⁶, Jeff Vallet ⁷

¹The Hanor Company, LLC, ²Smithfield Hog Production, ³USDA, ARS, U.S. Meat Animal Research Center, ⁴Smithfield Hog Production, ⁵Iowa State University, ⁶Iowa State University, ⁷USDA, ARS, US Meat Animal Research Center

3:30 p.m. **Effects of swab type on detection of PEDV from feed manufacturing surfaces**

Steve S. Dritz ¹, Cassandra K. Jones ², Megan C. Niederwerder ³, Savannah C. Stewart ⁴, Jason C. Woodworth ⁵

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University

4:00 p.m. **Neonatal birth weight effects on gilt development growth and first parity reproductive efficiency**

R. Dean Boyd ¹, Ashley DeDecker ², Clay A. Lents ³, Xochitl Martinez ⁴, Kenneth J. Stalder ⁵, China Supakorn ⁶, Jeff Vallet ⁷

¹The Hanor Company, LLC, ²Smithfield Hog Production, ³USDA, ARS, U.S. Meat Animal Research Center, ⁴Smithfield Hog Production, ⁵Iowa State University, ⁶Iowa State University, ⁷USDA, ARS, US Meat Animal Research Center

4:15 p.m. **Associations between day one piglet serum immunocrit ratio and subsequent growth during gilt development**

R. Dean Boyd ¹, Ashley DeDecker ², Clay A. Lents ³, Xochitl Martinez ⁴, Gary Rohrer ⁵, Kenneth J. Stalder ⁶, China Supakorn ⁷, Jeff Vallet ⁸

¹The Hanor Company, LLC, ²Smithfield Hog Production, ³USDA, ARS, U.S. Meat Animal Research Center, ⁴Smithfield Hog Production, ⁵USMARC, ⁶Iowa State University, ⁷Iowa State University, ⁸USDA, ARS, US Meat Animal Research Center

Growth, Development, Muscle Biology and Meat Science Symposium: Novel Alternative Approaches to Conventional Meat Production Practices

Chair:

1:45 PM - 4:35 PM

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1:45 p.m. **Growth, Development, Muscle Biology and Meat Science Symposium: Novel Alternative Approaches to Conventional Meat Production Practices Introduction**

1:50 p.m. **Cellular Aquaculture and Agriculture: A Transformative Solution for Feeding our Planet**

Lou Cooperhouse ¹

¹BlueNalu, Inc.

2:30 p.m. **Gene editing in Livestock: Advancements, Opportunities and Challenges**

Anna C. Dilger ¹

¹University of Illinois Urbana-Champaign

3:10 p.m. **Growth, Development, Muscle Biology and Meat Science Symposium:
Novel Alternative Approaches to Conventional Meat Production Practices Break**

3:25 p.m. **Use of Cloning in Beef Production - the WTAMU PrimeOne Project**
Ty E. Lawrence¹, David Lust², Jessica Sperber³
¹West Texas A&M University, ²West Texas A&M University, ³West Texas A&M University

Dairy Translational Science Symposium

Chair:

1:45 PM - 5:00 PM

210

1:45 p.m. **Dairy Translational Science Symposium Introduction**

1:50 p.m. **Management Effects on Long-term Crop Yield Stability in Central and
Eastern Nebraska**

Virginia Jin¹, Marty Schmer², Aaron Sindelar³, Brian Wienhold⁴
¹USDA-Agricultural Research Service, ²USDA-Agricultural Research Service, ³Monsanto
Company, ⁴USDA-Agricultural Research Service

2:30 p.m. **Management of Cereal-Grain Forages for Yield and Quality**

Matthew Akins¹, Wayne K. Coblenz²
¹Department of Dairy Science, University of Wisconsin-Madison, ²USDA-ARS, US Dairy
Forage Research Center

3:10 p.m. **Dairy Translational Science Symposium Break**

3:25 p.m. **Alternative forages for dairy heifers**

Matthew Akins¹, Wayne K. Coblenz², Abbey Grisham³, Lingyan Li⁴, Elizabeth Remick⁵,
Huawei Su⁶
¹Department of Dairy Science, University of Wisconsin-Madison, ²USDA-ARS, US Dairy
Forage Research Center, ³Eastland Feed and Grain Inc., ⁴Heilongjiang Bayi Agricultural
University, ⁵Rock River Laboratory, ⁶China Agricultural University

4:05 p.m. **Advancements in silage management and technology for beef and dairy
cattle**

Emily Branstad¹, Layla King², Hugo Ramirez³
¹Iowa State University, ²Iowa State University, ³Iowa State University

4:45 p.m. **Dairy Translational Science Symposium Panel**

Breeding and Genetics Symposium: Genotyping Assays in Livestock

Chair:

1:45 PM - 5:05 PM

205/206

1:45 p.m. **Breeding and Genetics Symposium: Genotyping Assays in Livestock
Introduction**

1:50 p.m. **Expression quantitative trait loci and allele-specific expression
exhibiting joint association with polygenic trait phenotypes in pigs**

Ronald O. Bates ¹, Sebastian Casiro ², Kaitlyn R. Daza ³, Catherine Ernst ⁴, Nancy E. Raney ⁵, Juan P. Steibel ⁶, Deborah Velez-Irizaray ⁷

¹Michigan State University, ²Michigan State University, ³Michigan State University, ⁴MICHIGAN STATE UNIVERSITY, ⁵Michigan State University, ⁶MSU, ⁷Michigan State University

2:20 p.m. **Present and Future of Genomic Test Reporting in the Cattle Industry**
Stewart Bauck ¹, Ryan Ferretti ², Jamie Parham ³, Barry Simpson ⁴, Rich Tait ⁵, Jeremy Walker ⁶, Xiao-Lin Wu ⁷

¹Neogen GeneSeek Operations, ²Neogen GeneSeek Operations, ³Neogen GeneSeek Operations, ⁴Neogen GeneSeek Operations, ⁵Neogen GeneSeek Operations, ⁶Neogen GeneSeek Operations, ⁷Neogen GeneSeek Operations

2:50 p.m. **Breeding and Genetics Symposium: Genotyping Assays in Livestock Break**

3:05 p.m. **Opportunities for Using a Functional Chip in Beef**
E. John Pollack ¹

¹University of Nebraska-Lincoln

3:35 p.m. **Andy King Talk**

4:05 p.m. **Robert Schnabel Talk**

4:35 p.m. **Sue DeNise**

Billy Day Symposium

Chair:

1:45 PM - 5:30 PM

207

1:45 p.m. **Does crowding in the nursery affect future sow reproductive performance and longevity in the breeding herd?**

Stuart Callahan ¹, Amanda Cross ², Ashley DeDecker ³, Mark J. Estienne ⁴, Merlin D. Lindemann ⁵

¹Virginia Tech-Tidewater AREC, ²Department of Animal Science, North Carolina State University, ³Smithfield Hog Production, ⁴Virginia Tech-Tidewater AREC, ⁵University of Kentucky

2:25 p.m. **Nutritional Strategies to Manage Gilt Growth and Optimize Lifetime Productivity**

R. Dean Boyd ¹, Ashley DeDecker ², Clay A. Lents ³, Kenneth J. Stalder ⁴, China Supakorn ⁵, Jeff Vallet ⁶

¹The Hanor Company, LLC, ²Smithfield Hog Production, ³USDA, ARS, U.S. Meat Animal Research Center, ⁴Iowa State University, ⁵Iowa State University, ⁶USDA, ARS, US Meat Animal Research Center

3:05 p.m. **Billy Day Symposium Break**

3:15 p.m. **Effects of birth traits, physical or fenceline boar exposure and group size on pubertal measures and lifetime fertility of replacement gilts**

Lidia S. Arend ¹, Ashley Daniel ², George Foxcroft ³, Robert V. Knox ⁴, Jenny Patterson ⁵

¹University of Illinois, ²University of Illinois, ³University of Alberta, ⁴University of Illinois, ⁵University of Alberta

3:40 p.m. **Overview of the National Pork Board replacement gilt feet and leg evaluation trial**

Julia A. Calderon Diaz ¹, Max F. Rothschild ², Kenneth J. Stalder ³, Joseph D. Stock ⁴, China Supakorn ⁵

¹Teagasc Moorepark Grassland Research and Innovation Centre, ²Iowa State University, ³Iowa State University, ⁴Iowa State University, ⁵Iowa State University

4:10 p.m. **Issues of sow lifetime productivity from an international perspective: from research to production level**

Mari Bernardi ¹, Fernando Bortolozzo ², Andre L. Mallmann ³, Ana Paula Mellagi ⁴, Rafael Uguim ⁵

¹Universidade Federal do Rio Grande do Sul, ²Setor de Suínos - Universidade Federal do Rio Grande do Sul - UFRGS, ³Universidade Federal do Rio Grande do Sul, ⁴Setor de Suínos - Universidade Federal do Rio Grande do Sul - UFRGS, ⁵Setor de Suínos - Universidade Federal do Rio Grande do Sul - UFRGS

4:40 p.m. **Poor management of breeding herd replacements is a key factor in poor sow lifetime productivity: Gilty as charged**

George Foxcroft ¹, Jenny Patterson ²

¹University of Alberta, ²University of Alberta

5:10 p.m. **Billy Day Symposium Panel**

Growth, Development, Muscle Biology and Meat Science

Chair:

3:45 PM - 5:30 PM

213

3:45 p.m. **Effects of sex and sire line on relationships among early postmortem loin quality and aged loin and pork chop quality characteristics**

Dustin D. Boler ¹, Erin Bryan ², Anna C. Dilger ³, Bailey Harsh ⁴, Jessica Lowell ⁵, Martin Overholt ⁶, Emily D. Schunke ⁷, Chad A. Stahl ⁸

¹University of Illinois Urbana-Champaign, ²University of Illinois, ³University of Illinois Urbana-Champaign, ⁴University of Florida, ⁵University of Illinois Urbana-Champaign, ⁶University of Illinois Urbana-Champaign, ⁷University of Illinois Urbana-Champaign, ⁸Choice Genetics USA

3:45 p.m. **Growth, Development, Muscle Biology and Meat Science**

4:15 p.m. **Final internal cooking temperature of pork chops influenced consumer eating experience more than visual color and marbling**

Dustin D. Boler ¹, Anna C. Dilger ², Lauren T. Honegger ³, Elaine Richardson ⁴, Emily D. Schunke ⁵

¹University of Illinois Urbana-Champaign, ²University of Illinois Urbana-Champaign, ³University of Illinois Urbana-Champaign, ⁴University of Illinois Urbana-Champaign, ⁵University of Illinois Urbana-Champaign

4:30 p.m. **Impact of diet on shelf life of beef steaks**

Nicolas Bland ¹, Chris Calkins ², Kellen Hart ³, Morgan Henriott ⁴, Nicolas Herrera ⁵, Felipe Ribeiro ⁶

¹University of Nebraska, ²University of Nebraska, ³University of Nebraska, ⁴University of Nebraska, ⁵University of Nebraska, ⁶University of Nebraska

4:45 p.m. **Effect of 30% Wet Brewer's Grain Inclusion on the Growth and Carcass Performance of Finishing Cattle**

Danielle Belon ¹, Jennifer Earing ², Justin Rickard ³

¹Illinois State University, ²Illinois State University, ³Illinois State University

5:00 p.m. **Effects of replacing monensin and tylosin in finishing cattle diets with essential oil and/or benzoic acid on meat color and oxidative stability of ribeye steaks and ground beef**

Benjamin M. Bohrer ¹, Sebastian Chalupa-Krebzdak ², Shiqi Huang ³, Sandra M. Vasquez Mejia ⁴, Lydia M. Wang ⁵

¹University of Guelph, ²University of Guelph, ³University of Guelph, ⁴University of Guelph, ⁵University of Guelph

5:15 p.m. **Metabolic response of pigs to Porcine Reproductive and Respiratory Syndrome virus infection and nutrient restriction**

Eric R. Burrough ¹, Shelby Curry ², Carson De Mille ³, Nicholas K. Gabler ⁴, Emma T. Helm ⁵, Steven Lonergan ⁶, Wesley Schweer ⁷, Elizabeth Zuber ⁸

¹Iowa State University, ²BIOMIN America Inc., ³Iowa State University, ⁴Department of Animal Science, College of Agriculture and Life Sciences, Iowa State University, ⁵Iowa State University, ⁶Iowa State University, ⁷Iowa State University, ⁸Iowa State University

Genetics, Genomics & Bioinformatics II

Chair:

4:15 PM - 5:15 PM

202

4:15 p.m. **A genome-wide association study for gestation length in swine**

Daniel Ciobanu ¹, Benny Mote ², Garrett See ³, Matthew L. Spangler ⁴, Melanie Trenhaile-Gannemann ⁵

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

4:30 p.m. **Genomic prediction accuracies of vulva size traits in Landrace and Yorkshire gilts.**

Flor Anita. Corredor ¹, Aileen F. Keating ², Richard J. Leach ³, Jason W. Ross ⁴, Nick V.L. Serão ⁵

¹Iowa State University, ²Iowa State University, ³Fast Genetics, ⁴Iowa State University, ⁵Iowa State University

4:45 p.m. **Structural conformation differences between show pigs and commercial genetic lines**

Mark Knauer ¹, Dalton R. Obermier ², Zack Peppmeier ³

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

5:00 p.m. **The Effects of Feeding a Novel *Saccharomyces cerevisiae* Feed Additive on the Prevalence and Abundance of Antimicrobial Resistance Genes in the Microbiome(s) of Receiving Beef Calves**

Mary Sue Mayes ¹, James Reecy ², Dr. Andrew Severin ³, Morgan M. Sommer-Lassa ⁴, Dr. Arun Somwarpet-Seetharam ⁵
¹Iowa State University, ²Iowa State University, ³Iowa State University, ⁴Iowa State University, ⁵Iowa State University

Poster Session VI

5:00 PM - 5:45 PM

CenturyLink Grand Ballroom Foyer

5:00 p.m. **Assessment of undergraduate student learning in an animal science major**

Dennis Brink ¹, Thomas E. Burkey ², Lisa Karr ³, Shana Winkel ⁴

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

5:00 p.m. **Effects of Vitamin B12, Sodium Salicylate, and electrolyte supplementation on alleviating Porcine Reproductive and Respiratory Syndrome symptoms in nursery pigs**

Carson De Mille ¹, Nicholas K. Gabler ², Samuel Gerrard ³, Emma T. Helm ⁴, Locke A. Karriker ⁵, Blaire Todd ⁶

¹Iowa State University, ²Department of Animal Science, College of Agriculture and Life Sciences, Iowa State University, ³Iowa State University, ⁴Iowa State University, ⁵Iowa State University, ⁶Iowa State University

5:00 p.m. **Essential oils and benzoic acid, associated or not with antibiotic, in diets for weaned piglets on cecum microbiota composition**

Fábio Budiño ¹, Luiz Lehmann Coutinho ², Vinícius Paula ³, Rafaela Pereira ⁴, Urbano Santos. Ruiz ⁵, Cláudio Silva Júnior ⁶, Claudia C. Silva ⁷, Francine T. Falleiros ⁸, Polyana Tizioto ⁹

¹Instituto de Zootecnia, ²University of Sao Paulo - ESALQ, ³University of São Paulo, ⁴University of São Paulo, ⁵University of São Paulo, ⁶Universidade do Oeste Paulista, ⁷DSM, ⁸DSM, ⁹University of São Paulo

5:00 p.m. **Establishing ideal inclusion rate of fermented soybean meal (FSBM) in nursery rations**

Benjamin Bass ¹, Joshua Knapp ², Joshua Knapp ³, Charles V. Maxwell ⁴, Hannah Maxwell ⁵, A.J. Mercado ⁶, Tsung Cheng. Tsai ⁷, T Weeden ⁸

¹Purina Animal Nutrition, LLC, ²University of Arkansas - Fayetteville, Dale Bumpers College of Agriculture, Department of Animal Science, ³University of Arkansas - Fayetteville, Dale Bumpers College of Agriculture, Department of Animal Science, ⁴University of Arkansas - Fayetteville, ⁵University of Arkansas - Fayetteville, Dale Bumpers College of Agriculture, Department of Animal Science, ⁶Purina Animal Nutrition, LLC, ⁷University of Arkansas - Fayetteville, Dale Bumpers College of Agriculture, Department of Animal Science, ⁸Purina Animal Nutrition, LLC

5:00 p.m. **Estimation of the optimal standardized ileal digestible valine to lysine ratio required for growing-finishing pigs in low crude protein diets**

S. K. Baidoo ¹, L. Hanson ², Q. Huang ³, Hayford Manu ⁴, D Pangen ⁵

¹University of Minnesota, ²University of Minnesota, ³University of Minnesota, ⁴University of Minnesota, ⁵University of Minnesota

5:00 p.m. **Evaluating the effects of day of iron injection after farrowing on nursery performance and hematological criteria**

Joel M. DeRouchey¹, Steve S. Dritz², Robert D. Goodband³, Andrew Holtcamp⁴, Cierra Roubicek⁵, Mike D. Tokach⁶, Hayden E. Williams⁷, Jason C. Woodworth⁸
¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Ceva Animal Health, LLC., ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University, ⁸Kansas State University

5:00 p.m. **Evaluating the effects of feed form, with and without a nutritional water supplement, on the performance of piglets raised in a commercial research facility without feed grade antibiotics**

Megan R. Bible¹, Steve J. England², Fredrik Sandberg³, Kevin T. Soltwedel⁴
¹Furst-McNess, ²Furst-McNess, ³Furst-McNess, ⁴Furst-McNess

5:00 p.m. **Evaluating the productive energy content of high-protein distillers dried grains in swine diets**

Henrique S. Cemin¹, Joel M. DeRouchey², Steve S. Dritz³, Robert D. Goodband⁴, Mike D. Tokach⁵, Jason C. Woodworth⁶
¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University

5:00 p.m. **Evaluation of a nutritional water supplement on growth performance of nursery pigs**

Pornpim Aparachita¹, Megan R. Bible², Scott Carter³, Carson Cooper⁴, Fredrik Sandberg⁵, Afton Sawyer⁶
¹Oklahoma State University, ²Furst-McNess, ³Oklahoma State University, ⁴Oklahoma State University, ⁵Furst-McNess, ⁶Oklahoma State University

5:00 p.m. **Evaluation of amino acid digestibility in several feed ingredients fed to growing pigs**

Qiong Hu¹, Neil Paton², Chris van de Ligt³
¹Cargill Animal Nutrition, ²Cargill Animal Nutrition, ³Cargill Animal Nutrition

5:00 p.m. **Evaluation of essential oils and short-medium chain fatty acids in-vitro and in-vivo on performance of nursery pigs**

Glen Almond¹, Kory Moran², Jan Dirk van der Klis³, Eric van Heugten⁴
¹College of Veterinary Medicine, North Carolina State University, ²Delacon Biotechnik, ³Delacon Biotechnik, ⁴Department of Animal Science, North Carolina State University

5:00 p.m. **Evaluation of National 4-H Hippology and Livestock Skillathon Contests**

Katherine Bertolini¹, Rosemarie Nold², Savanna Tomoson³
¹South Dakota State University, ²South Dakota State University, ³South Dakota State University

5:00 p.m. **Feed NSPase Enzyme, Natugrain® TS, Improves Performance and Carcass Characteristics of Grow-finishing Pigs**

Michael Coelho¹, Robert Jones², Frank Parks³
¹BASF, ²Integrated Farm Research, Inc., ³Integrated Farm Research, Inc.

5:00 p.m. **Feedback Optimization: An Iterative, Value-Added Approach in a Beef Cattle Breeding Simulation**

Maria Haag¹, William Lamberson², Justin Le Tourneau³, Rose Marra⁴
¹University of Missouri, ²University of Missouri, ³Quetza, LLC, ⁴University of Missouri

5:00 p.m. **Feeding enzymatically digested food waste altered fecal microbiota of growing-finishing pigs**

Cynthia Jinno¹, Yanhong Liu², Elizabeth Maga³, Perot Saelao⁴

¹University of California, Davis, ²University of California, Davis, ³University of California, Davis, ⁴University of California, Davis

5:00 p.m. **Growth performance and immune responses of weaned pigs from lactating sows fed dietary spray dried plasma**

Jangryeol Baek¹, Jeehwan Choe², Joowon Kang³, Byeonghyeon Kim⁴, Junsu Kim⁵, Kwangwook Kim⁶, Sheena Kim⁷, Soyun Kim⁸, Jeongjae Lee⁹, Yanhong Liu¹⁰, Daye Mun¹¹, Minh Song¹²

¹Chungnam National University, ²Chungnam National University, ³Chungnam National University, ⁴Chungnam National University, ⁵Chungnam National University, ⁶University of California, Davis, ⁷Chungnam National University, ⁸Chungnam National University, ⁹Chungnam National University, ¹⁰University of California, Davis, ¹¹Chungnam National University, ¹²Chungnam National University

5:00 p.m. **Identification of correlations between aldehyde profiles of thermally oxidized soybean oils and growth performance of broilers**

Chi Chen¹, Brian Kerr², Jieyao Yuan³

¹University of Minnesota, ²USDA-ARS, ³University of Minnesota

5:00 p.m. **Interactive effects of Cordyceps Mushroom Powder and Carbadox on Nursery Pig Performance**

Clayton S. Chastain¹, Jim L. Nelssen², Jorge Y P. Palencia³, Brian T. Richert⁴, Jacob A. Richert⁵, Morgan T. Thayer⁶

¹Purdue University, ²Kansas State University, ³Universidade Federal de Lavras – Brazil, ⁴Purdue University, ⁵Kansas State University, ⁶Purdue University

5:00 p.m. **Interactive effects of Zn sources, Cu sources and phytase on growth performance in nursery pigs**

Joe Cushing¹, Ping Ren², Mercedes Vazquez-Anon³, Karen Wedekind⁴

¹Novus International, Inc, ²Novus International, Inc, ³Novus International, Inc, ⁴Novus International, Inc

5:00 p.m. **Interactive effects of Zn sources, Cu sources and phytase on mineral digestibility and tissue mineral concentrations in nursery pigs**

Joe Cushing¹, Ping Ren², Mercedes Vazquez-Anon³, Karen Wedekind⁴

¹Novus International, Inc, ²Novus International, Inc, ³Novus International, Inc, ⁴Novus International, Inc

5:00 p.m. **Meta-analysis of increasing lysine and energy in late gestation on piglet growth, colostrum composition and piglet throughput**

Mark Knauer¹, Jeffrey Wiegert²

¹Department of Animal Science, North Carolina State University, ²Department of Animal Science, North Carolina State University

5:00 p.m. **Nutrient and energy digestibility of steam-exploded canola meal in cannulated grower pigs**

Eduardo Beltranena¹, Bich Van Le Thanh², Rex N. Newkirk³, Lifang Wang⁴, Ruurd T. Zijlstra⁵

¹Alberta Agriculture and Forestry, ²University of Alberta, ³University of Saskatchewan, ⁴University of Alberta, ⁵Department of Agricultural, Food and Nutritional Science, University of Alberta, University of Alberta

5:00 p.m. **Responses of undergraduate students pre- and post-education on poultry industry and welfare issues**

Elizabeth A. Bobeck¹, Meaghan M. Meyer²

¹Iowa State University, ²Iowa State University

5:00 p.m. **Undergraduate research experiences improve critical thinking ability of animal science students**

Cassandra K. Jones¹

¹Kansas State University

5:00 p.m. **Undergraduate success in animal science courses based on demographics, motivation, and online courses**

Kathy Anderson¹, Nathan Conner², Lisa Karr³, Haylee Lavoie⁴

¹University of Nebraska - Lincoln, ²University of Nebraska - Lincoln, ³University of Nebraska - Lincoln, ⁴University of Nebraska - Lincoln

Wednesday, March 13, 2019

Poster Session VII

7:30 AM - 8:15 AM

CenturyLink Grand Ballroom Foyer

7:30 a.m. **Effect of dietary digestible calcium level on growth and feed efficiency of 12 to 25 kg nursery pigs**

R. Dean Boyd¹, Amanda Elsbernd², Laura Merriman³, Kristin Olsen⁴, Jenny Picou⁵, David Rosero⁶, Steven Smith⁷, Carrie L. Walk⁸, Pete Wilcock⁹

¹The Hanor Company, LLC, ²The Hanor Company LLC, ³AB Vista, ⁴Iowa Pork Industry Center, Iowa State University, ⁵The Hanor Company LLC, ⁶The Hanor Company LLC, ⁷The Hanor Company LLC, ⁸AB Vista, ⁹AB Vista

7:30 a.m. **Effects dietary herbal vitamin E on lamb performance, ruminal fermentation, blood biochemical profile, and meat oxidative stability**

Marco A. Ayala¹, Jose L. Cordero², Pedro A. Hernandez³, José A. Martinez-Aispuro⁴, Jose A. Martinez⁵, German D. Mendoza⁶

¹Universidad Autónoma de Guerrero MVZ, ²Colegio de Postgraduados Programa de Ganadería, ³Universidad Autónoma del Estado de México Campus Amecameca, ⁴Colegio de Postgraduados Programa de Ganadería, ⁵Universidad Autónoma Metropolitana Xochimilco, ⁶Universidad Autónoma Metropolitana Xochimilco

7:30 a.m. **Effects of a multi-species direct-fed microbial on growth performance and carcass characteristics of grow-finish pigs**

Mariana Boscato Menegat¹, Joel M. DeRouchey², Steve S. Dritz³, Robert D. Goodband⁴, Mike D. Tokach⁵, Jason C. Woodworth⁶

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University

7:30 a.m. **Effects of a synbiotic (probiotic+prebiotic) on the reproductive efficiency of multiparous sows**

Shelby Curry¹, Gene G. Gourley², Erika G. Hendel³, G.R. Murugesan⁴, Daniel Petri⁵

¹BIOMIN America Inc., ²Gourley Research Group, ³BIOMIN America Inc., ⁴BIOMIN America Inc., ⁵BIOMIN Holding GmbH

7:30 a.m. **Effects of *Bacillus* spp. probiotics on systemic immunity and intestinal health of weaned pigs experimentally infected with an enterotoxigenic *Escherichia coli***

Kiran Doranalli ¹, Yijie He ², Cynthia Jinno ³, Kwangwook Kim ⁴, Yanhong Liu ⁵, Rose Whelan ⁶, Zhaohai Wu ⁷

¹Evonik Nutrition & Care GmbH, ²University of California, Davis, ³University of California, Davis, ⁴University of California, Davis, ⁵University of California, Davis, ⁶Evonik Nutrition & Care GmbH, ⁷University of California, Davis

7:30 a.m. **Effects of oral administration of essential oils on anti-immune stress, antimicrobial and repairing the intestinal damage in broilers challenged by lipopolysaccharide**

Jiseon An ¹, Jinho Cho ², Jihwan Lee ³, Shudong Liu ⁴, Hanjin Oh ⁵, Won Yun ⁶

¹Chungbuk National University, ²Chungbuk National University, ³Chungbuk national university, ⁴Chungbuk National University, ⁵Chungbuk National University, ⁶Chungbuk National University

7:30 a.m. **Efficacy of corn dried distillers grains with solubles as a replacement for soybean meal in a Boer goat diet**

Alison R. Crane ¹, Cassandra K. Jones ², James M. Lattimer ³, T G. Nagaraja ⁴, Rachel J. Sorensen ⁵, Savannah C. Stewart ⁶

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University

7:30 a.m. **Galactosylated chitosan-oligosaccharides have anti-adhesive effect against enterotoxigenic *Escherichia coli* in piglets**

Michael G. Gänzle ¹, Charlotte Maria Elisabeth. Heyer ², Weilan Wang ³, Yalu Yan ⁴, Ruurd T. Zijlstra ⁵

¹University of Alberta, ²University of Alberta, ³Department of Agricultural, Food and Nutritional Science, University of Alberta, University of Alberta, ⁴Department of Agricultural, Food and Nutritional Science, University of Alberta, University of Alberta, ⁵Department of Agricultural, Food and Nutritional Science, University of Alberta, University of Alberta

7:30 a.m. **Impact of USDA Feeder Cattle Grade and Hide Color on Sale Price of West Virginia Feeder Cattle**

Danielle Foglesong ¹, Kevin Shaffer ²

¹West Virginia University, ²West Virginia University

7:30 a.m. **Optimal standardized ileal digestible lysine and methionine + cysteine to lysine ratio for 12 to 23 kg pigs fed antibiotic-free diets**

Maria E. Carpena ¹, Thi B. A. Dao ², Le Q. C. Ho ³, Trung T. Ho ⁴, John K. Htoo ⁵, Nu A. T. Le ⁶

¹Evonik (Philippines) Inc., ²Institute of Animal Husbandry, Hanoi, Vietnam, ³Faculty of Animal Sciences and Veterinary Medicine, College of Agriculture and Forestry - Hue University, Vietnam, ⁴Faculty of Animal Sciences and Veterinary Medicine, College of Agriculture and Forestry - Hue University, Vietnam, ⁵Evonik Nutrition & Care GmbH, ⁶Faculty of Animal Sciences and Veterinary Medicine, College of Agriculture and Forestry - Hue University, Vietnam

7:30 a.m. **Potential biomarkers of intestinal injury and inflammation in nursery pigs fed prebiotics**

Thomas E. Burkey¹, Sydney Kinstler², Phillip Miller³, Joice V. San Andres⁴, Andres Schlageter-Tello⁵, Melanie Trenhaile-Gannemann⁶, Dana van Sambeek⁷, Shana Winkel⁸
¹Department of Animal Science, University of Nebraska-Lincoln, ²University of Nebraska Lincoln, ³University of Nebraska Lincoln, ⁴University of Nebraska, ⁵University of Nebraska Lincoln, ⁶University of Nebraska-Lincoln, ⁷University of Nebraska Lincoln, ⁸University of Nebraska Lincoln

7:30 a.m. **Revision of the model estimating real-time Lys requirements in individual growing-finishing pigs**

Candido Pomar¹, Aline Remus²
¹Agriculture and Agri-Food Canada, ²Agriculture and Agri-Food Canada

7:30 a.m. **The Effect of Feeding a LucraFit® Nursery Program without Lactose on Piglet Performance.**

Stacie Crowder¹, Brenda DeRodas², Clayton Hankins³, Terry Meyer⁴, Terry Weeden⁵
¹Purina Animal Nutrition, ²Purina Animal Nutrition, ³Purina Animal Nutrition, ⁴Purina Animal Nutrition, ⁵Purina Animal Nutrition

7:30 a.m. **The Effect of Supplementing Pigs with the BASF Annual Industry Vitamin Supplementation on performance**

Michael Coelho¹, Robert Jones², Frank Parks³
¹BASF, ²Integrated Farm Research, Inc., ³Integrated Farm Research, Inc,

7:30 a.m. **The effects of feeding a fortified protein blend as a replacement for animal and fish proteins in nursery pig diets**

Matthew D. Asmus¹, Clayton S. Chastain², Alan W. Duttlinger³, Julie A. Feldpausch⁴, Dan B. Jones⁵, Kayla M. Mills⁶, Jorge Y P. Palencia⁷, Brian T. Richert⁸
¹Archer Daniels Midland Company, ²Purdue University, ³Purdue University, ⁴Purdue University, ⁵Archer Daniels Midland Company, ⁶Purdue University, ⁷Universidade Federal de Lavras – Brazil, ⁸Purdue University

7:30 a.m. **The effects of maternal dietary supplementation of cholecalciferol (vitamin D3) and 25(OH)D3 on progeny muscle fiber measures**

Jon R. Bergstrom¹, John M. Gonzalez², Stephanie R. Kruger³, Austin J. Langemeier⁴, Andrew J. Makowski⁵, Jodi M. Morton⁶, Jim L. Nelssen⁷, Zhining Ou⁸, Morgan T. Thayer⁹
¹DSM Nutritional Products North America, ²Kansas State University, ³Kansas State University, ⁴Sioux Nation Ag Center, ⁵Heartland Assays LLC & Metabolic Technologies, Inc., ⁶South Dakota State University, ⁷Kansas State University, ⁸University of Utah, ⁹Purdue University

7:30 a.m. **The effects of maternal dietary supplementation of cholecalciferol (vitamin D3) and 25(OH)D3 on sow and progeny vitamin D3 status**

Jon R. Bergstrom¹, John M. Gonzalez², Stephanie R. Kruger³, Austin J. Langemeier⁴, Andrew J. Makowski⁵, Jodi M. Morton⁶, Jim L. Nelssen⁷, Zhining Ou⁸, Morgan T. Thayer⁹
¹DSM Nutritional Products North America, ²Kansas State University, ³Kansas State University, ⁴Sioux Nation Ag Center, ⁵Heartland Assays LLC & Metabolic Technologies, Inc., ⁶South Dakota State University, ⁷Kansas State University, ⁸University of Utah, ⁹Purdue University

7:30 a.m. **The extraphosphoric effects of Citrobacter braakii derived phytase on carcass yield of pigs in grower and finisher phases**

Marco A. Callegari¹, Caio A. Silva², Rafael F. Sens³, Ana M. Bridi⁴, Cleandro P. Dias⁵, Carlos R. Pierozan⁶, Claudia C. Silva⁷, Francine T. Falleiros⁸
¹AKEI, ²UEL, ³DSM, ⁴UEL, ⁵AKEI, ⁶AKEI, ⁷DSM, ⁸DSM

7:30 a.m. **The influence of meal worm levels on growth performance, nutrient digestibility, and immune response in weaning pigs**

Jung Woo Choi¹, Abdolreza Hosseindoust², JinSoo Kim³, KwangYeol Kim⁴, Seung Min Oh⁵, SeYoung Yoon⁶

¹kangwon National University, ²kangwon National University, ³kangwon national University, ⁴kangwon National University, ⁵kangwon National University, ⁶kangwon National University

7:30 a.m. **Xylanase improved the nutrient and energy digestibility of diets high in insoluble corn fiber fed to swine following a 36-d dietary adaptation period**

Mike R. Bedford¹, Nichole F. Huntley², John F. Patience³, Amy L. Petry⁴

¹AB Vista, ²Dept. of Animal Science, Iowa State University, ³Dept. of Animal Science, Iowa State University, ⁴Texas Tech University

7:30 a.m. **Zinc overload in weaned pigs: tissue accumulation, pathology, and growth impacts**

Eric R. Burrough¹, Carson De Mille², Nicholas K. Gabler³

¹Iowa State University, ²Iowa State University, ³Department of Animal Science, College of Agriculture and Life Sciences, Iowa State University

7:30 a.m. **Increased feeding level in peak lactation did not increase litter gain in hyper prolific sows**

Thomas S. Bruun¹, Camilla K. Højgaard², Anja V. Strathe³

¹SEGES Danish Pig Research Centre, ²SEGES Danish Pig Research Centre and Aarhus University, ³University of Copenhagen

Nonruminant Nutrition: Minerals

Chair:

8:00 AM - 10:15 AM

205/206

8:00 a.m. **A systematic review and meta-analysis of Ca digestibility and utilisation in growing and finishing pigs**

Joao A.N. Filipe¹, Ilias Kyriazakis², Maciej M. Misiura³, Carrie L. Walk⁴

¹Newcastle University, ²Newcastle University, ³Newcastle University, ⁴AB Vista

8:15 a.m. **Standardized total tract digestible phosphorus requirement of 6- to 13-kg pigs fed diets with or without phytase**

Jon R. Bergstrom¹, Joel M. DeRouchey², Steve S. Dritz³, Robert D. Goodband⁴, Cassandra K. Jones⁵, Mike D. Tokach⁶, Fangzhou Wu⁷

¹DSM Nutritional Products North America, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University

8:30 a.m. **Whole-grain fiber composition modifies phosphorus digestibility in grower pigs**

Janelle M. Fohse¹, Charlotte Maria Elisabeth. Heyer², Thavar Vasanthan³, Ruurd T. Zijlstra⁴

¹University of Alberta, ²University of Alberta, ³Department of Agricultural, Food and Nutritional Science, University of Alberta, ⁴Department of Agricultural, Food and Nutritional Science, University of Alberta, University of Alberta

8:45 a.m. **Influence of the level of dietary digestible Ca on growth performance, bone ash, plasma Ca, and abundance of genes involved in Ca absorption in 11- to 25-kg pigs fed different levels of digestible P**

Vanessa Lagos¹, Hans H. Stein², Carrie L. Walk³

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

9:00 a.m. **Effects of increasing calcium to available phosphorus ratios in diets containing phytase on growth performance and bone mineral content of nursery pigs**

Spenser L. Becker¹, Stacie A. Gould², Leah M. Kellesvig³, Dean D. Koehler⁴, John F. Patience⁵, Jose A. Soto⁶

¹Dept. of Animal Science, Iowa State University, ²Dept. of Animal Science, Iowa State University, ³Vita Plus Corporation, ⁴Vita Plus Corporation, ⁵Dept. of Animal Science, Iowa State University, ⁶Vita Plus Corporation

9:15 a.m. **Standardized total tract digestible phosphorus requirement of 11- to 23-kg pigs fed diets containing phytase**

Joel M. DeRouchey¹, Steve S. Dritz², Robert D. Goodband³, Mike D. Tokach⁴, Carine M. Vier⁵, Jason C. Woodworth⁶

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University

9:30 a.m. **Nonruminant Nutrition: Minerals Break**

9:45 a.m. **Effects of dietary analyzed calcium to analyzed phosphorus ratio on growth performance, carcass characteristics, and bone mineralization in 26- to 127-kg pigs**

Jon R. Bergstrom¹, Joel M. DeRouchey², Steve S. Dritz³, Márcio A.D. Gonçalves⁴, Robert D. Goodband⁵, Uislei A.D. Orlando⁶, Mike D. Tokach⁷, Carine M. Vier⁸, Jason C. Woodworth⁹

¹DSM Nutritional Products North America, ²Kansas State University, ³Kansas State University, ⁴Genus PIC, ⁵Kansas State University, ⁶Genus PIC, ⁷Kansas State University, ⁸Kansas State University, ⁹Kansas State University

10:00 a.m. **Effects of dietary analyzed calcium to phosphorus ratio on growth performance, carcass characteristics, and bone mineralization of 26- to 127-kg pigs fed diets containing phytase**

Jon R. Bergstrom¹, Joel M. DeRouchey², Steve S. Dritz³, Márcio A.D. Gonçalves⁴, Robert D. Goodband⁵, Uislei A.D. Orlando⁶, Mike D. Tokach⁷, Carine M. Vier⁸, Jason C. Woodworth⁹

¹DSM Nutritional Products North America, ²Kansas State University, ³Kansas State University, ⁴Genus PIC, ⁵Kansas State University, ⁶Genus PIC, ⁷Kansas State University, ⁸Kansas State University, ⁹Kansas State University

Physiology Symposium: Molecular Mechanisms of Heat Stress in Livestock

Chair:

8:30 AM - 11:35 AM

211/212

8:30 a.m. **Physiology Symposium: Molecular Mechanisms of Heat Stress in Livestock Introduction**

8:35 a.m. **Developing and validating a heat stress model in dairy cows**

Megan A. Abeyta ¹, Mohammad Al-Qaisi ², Lance H. Baumgard ³, Brady M. Goetz ⁴, Erin A. Horst ⁵, Sara Kvidera ⁶, Edith J. Mayorga ⁷, Leo Timms ⁸
¹Iowa State University, ²Iowa State University, ³Iowa State University, ⁴Iowa State University, ⁵Iowa State University, ⁶Iowa State University, ⁷Iowa State University, ⁸Iowa State University

9:05 a.m. **Physiology Symposium: Molecular Mechanisms of Heat Stress in Livestock Talk 1**

9:35 a.m. **Physiology Symposium: Molecular Mechanisms of Heat Stress in Livestock Talk 2**

10:05 a.m. **Physiology Symposium: Molecular Mechanisms of Heat Stress in Livestock Break**

10:50 a.m. **Physiology Symposium: Molecular Mechanisms of Heat Stress in Livestock Talk 4**

11:20 a.m. **Physiology Symposium: Molecular Mechanisms of Heat Stress in Livestock Panel**

Nonruminant Nutrition: Feed Ingredients

Chair:

8:30 AM - 10:15 AM

214

8:30 a.m. **Effects of feeding increasing amounts of finishing diet blended with nursery diets on growth performance and economics of nursery pigs**

Joel M. DeRouchey ¹, Steve S. Dritz ², Robert D. Goodband ³, Chad W. Hastad ⁴, Cassandra K. Jones ⁵, Mike D. Tokach ⁶, Fangzhou Wu ⁷

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴New Fashion Pork, ⁵Kansas State University, ⁶Kansas State University, ⁷Kansas State University

8:45 a.m. **Effects of soybean meal level and distillers dried grains with solubles inclusion on growth performance of late nursery pigs**

Henrique S. Cemin ¹, Joel M. DeRouchey ², Steve S. Dritz ³, Aaron M. Gaines ⁴, Robert D. Goodband ⁵, Brent W. Ratliff ⁶, Mike D. Tokach ⁷, Jason C. Woodworth ⁸

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Ani-Tek Group, LLC, ⁵Kansas State University, ⁶Ani-Tek Group, LLC, ⁷Kansas State University, ⁸Kansas State University

9:00 a.m. **Effects of dietary corn distillers dried grains with solubles withdrawal on finishing pig performance and carcass characteristics**

Emily K. Arkfeld ¹, Hilda Calderon Cartagena ², Kyle F. Coble ³, Joel M. DeRouchey ⁴, Steve S. Dritz ⁵, Robert D. Goodband ⁶, Chad W. Hastad ⁷, Annie B. Lerner ⁸, Mike D. Tokach ⁹, Christopher I. Vahl ¹⁰, Jason C. Woodworth ¹¹

¹Triumph Foods, ²Kansas State University, ³JBS Live Pork, ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University, ⁷New Fashion Pork, ⁸Kansas State University, ⁹Kansas State University, ¹⁰Kansas State University, ¹¹Kansas State University

9:15 a.m. **Effects of dietary lactose level on nursery pig performance**

Jon De Jong ¹, Jason Frank ², Casey Neill ³, Emily Sholtz ⁴

¹Pipestone Grow Finish, ²International Ingredient Corporation, ³Pipestone Grow Finish, ⁴Pipestone Grow Finish

9:30 a.m. **Impacts of two energy sources (modified soy oil and medium chain triglycerides) on growth performance and health of nursery pigs**

Sara Ebarb ¹, Richard Faris ², Kathryn Price ³, Sabrina Williams ⁴, Junmei Zhao ⁵

¹Cargill Premix & Nutrition, ²Cargill Premix & Nutrition, ³Cargill Premix & Nutrition, ⁴Cargill Premix & Nutrition, ⁵Cargill Premix & Nutrition

9:45 a.m. **Effects of Carbohydrate Source On Performance and Gastrointestinal Microbiota in Nursery Pigs**

Thomas E. Burkey ¹, Samodha C. Fernando ², Sydney Kinstler ³, Allison Knoell ⁴, Yanshao Li ⁵, Phillip Miller ⁶, Wesley A. Tom ⁷, Melanie Trenhaile-Gannemann ⁸

¹Department of Animal Science, University of Nebraska-Lincoln, ²Department of Animal Science, University of Nebraska-Lincoln, ³University of Nebraska Lincoln, ⁴University of Nebraska-Lincoln, ⁵University of Nebraska-Lincoln, ⁶University of Nebraska Lincoln, ⁷School of Biological Sciences, University of Nebraska-Lincoln, ⁸University of Nebraska-Lincoln

10:00 a.m. **Digestibility of amino acids, fiber, and energy, and concentrations of digestible and metabolizable energy in conventional and extruded yellow dent corn, wheat, and sorghum fed to growing pigs**

Cassandra K. Jones ¹, Su A Lee ², Mary B. Muckey ³, Diego A. Rodriguez ⁴, Hans H. Stein ⁵

¹Kansas State University, ²University of Illinois at Urbana-Champaign, ³Kansas State University, Manhattan, ⁴University of Illinois at Urbana-Champaign, ⁵University of Illinois at Urbana-Champaign

Nonruminant Nutrition: Fiber/Enzymes

Chair:

8:30 AM - 10:15 AM

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8:30 a.m. **Xylanase and fermentable xylo-oligosaccharides improve performance in grower-finisher pigs fed a corn-soybean meal based diet**

Gustavo Cordero ¹, Gemma González-Ortiz ², Jae Cheol Kim ³, Helen Masey-O'Neill ⁴, Saksit Srinongkote ⁵, Natasha Whenham ⁶

¹AB Vista, ²AB Vista, ³AB Vista, ⁴AB agri, ⁵Bangkok Animal Research Center Co., Ltd, ⁶AB Vista

8:45 a.m. **Impact of insoluble dietary fiber on the efficacy of the phytase enzyme in nursery pigs**

Jesus A. Acosta ¹, John F. Patience ²

¹Dept. of Animal Science, Iowa State University, ²Dept. of Animal Science, Iowa State University

9:00 a.m. **The interactions between dietary fiber and lipid sources alter the predicted production and absorption of caecal and colorectal volatile fatty acids in growing pigs**

Cornelis de Lange ¹, Elijah Kiarie ², Saymore PETROS. Ndou ³, C. Martin Nyachoti ⁴, Maria Walsh ⁵

¹University of Guelph, ²University of Guelph, ³UNIVERSITY OF MANITOBA, ⁴University of Manitoba, ⁵Danisco Animal Nutrition-DuPont Industrial Biosciences

9:15 a.m. **Nonruminant Nutrition: Fiber/Enzymes Break**

9:30 a.m. **Impact of dietary fiber and carbohydrases on intestinal gene transcription in enterotoxigenic E. coli challenged pigs**

Eric R. Burrough¹, Nicholas K. Gabler², Stacie A. Gould³, Qingyun Li⁴, Crystal L. Loving⁵, John F. Patience⁶, Orhan Sahin⁷, Christopher K. Tuggle⁸

¹Iowa State University, ²Department of Animal Science, College of Agriculture and Life Sciences, Iowa State University, ³Dept. of Animal Science, Iowa State University, ⁴Dept. of Animal Science, Iowa State University, ⁵USDA-ARS-National Animal Disease Center, ⁶Dept. of Animal Science, Iowa State University, ⁷Dept. of Veterinary Diagnostic and Production Animal Medicine, Iowa State University, ⁸Dept. of Animal Science, Iowa State University

9:45 a.m. **Can growth performance, digesta characteristics, and oxidative status of swine fed diets high in insoluble fiber be improved? An investigation into the mode of action of xylanase**

Mike R. Bedford¹, Nichole F. Huntley², John F. Patience³, Amy L. Petry⁴

¹AB Vista, ²Dept. of Animal Science, Iowa State University, ³Dept. of Animal Science, Iowa State University, ⁴Texas Tech University

10:00 a.m. **Growth performance of weaned pigs fed multi-enzyme supplemented corn-soybean meal-based diets – two semi-commercial studies**

Jie Feng¹, Wenting Li²

¹Zhejiang University, ²DuPont Animal Nutrition

Nonruminant Nutrition: General

Chair:

8:30 AM - 10:30 AM

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8:30 a.m. **Susceptibility of several species of gram-negative and gram-positive bacteria to organic acids and their derivatives**

Edward Robert Atwill¹, Lauren Kovanda², Yanhong Liu³, Xunde Li⁴, Jacob Lum⁵, Jia Luo⁶, Richard Sygall⁷, Xiaohong Wei⁸, Xixi Wu⁹, Wen Zhang¹⁰

¹University of California, Davis, ²University of California, Davis, ³University of California, Davis, ⁴University of California, Davis, ⁵Perstorp Feed and Food, ⁶University of California, Davis, ⁷Perstorp Feed and Food, ⁸University of California, Davis, ⁹University of California, Davis, ¹⁰University of California, Davis

8:45 a.m. **Digestibility, Fecal Characteristics, and Blood Parameters of Adult Dogs Fed High Fat Diets**

Logan R. Kilburn¹, Mariana C. Rossoni Serao²

¹Iowa State University, ²Iowa State University

9:00 a.m. **Effects of proportion of pigs per feeder hole and stocking density on growth performance and tail and ear biting in the nursery**

Fernando Bortolozzo¹, Jamil E G. Faccin², Fernanda Laskoski³, Ana Paula Mellagi⁴, Elisa Rigo De Conti⁵, Rafael Ulguim⁶

¹Setor de Suínos - Universidade Federal do Rio Grande do Sul - UFRGS, ²Setor de Suínos - Universidade Federal do Rio Grande do Sul - UFRGS, ³Setor de Suínos - Universidade Federal do Rio Grande do Sul - UFRGS, ⁴Setor de Suínos - Universidade Federal do Rio

Grande do Sul - UFRGS, ⁵Setor de Suínos - Universidade Federal do Rio Grande do Sul - UFRGS, ⁶Setor de Suínos - Universidade Federal do Rio Grande do Sul - UFRGS

9:15 a.m. **Trends in Mycotoxin Contamination in the United States Corn**

Shelby Curry ¹, Paige Gott ², Erika G. Hendel ³, Ursula Hofstetter-Schähs ⁴, G.R. Murugesan ⁵

¹BIOMIN America Inc., ²BIOMIN America Inc., ³BIOMIN America Inc., ⁴BIOMIN Holding GmbH, ⁵BIOMIN America Inc.

9:30 a.m. **Fate of Pentoses in the Small Intestine and Hindgut of Growing Pigs**

Jerubella J. Abelilla ¹, Hans H. Stein ²

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

9:45 a.m. **Nonruminant Nutrition: General Break**

10:00 a.m. **Increasing weaning age: a tool to improve pig performance in a multisite production system**

Fernando Bortolozzo ¹, Jamil E G. Faccin ², Luciana Hernig ³, Fernanda Laskoski ⁴, Ana Paula Mellagi ⁵, Rafael Ulguim ⁶

¹Setor de Suínos - Universidade Federal do Rio Grande do Sul - UFRGS, ²Setor de Suínos - Universidade Federal do Rio Grande do Sul - UFRGS, ³Setor de Suínos UFRGS, ⁴Setor de Suínos - Universidade Federal do Rio Grande do Sul - UFRGS, ⁵Setor de Suínos - Universidade Federal do Rio Grande do Sul - UFRGS, ⁶Setor de Suínos - Universidade Federal do Rio Grande do Sul - UFRGS

10:15 a.m. **Impact of mycotoxin contamination of feed on growth performance and blood metabolites of growing pigs**

Jesus A. Acosta ¹, Gwendolyn M. Jones ², John F. Patience ³

¹Dept. of Animal Science, Iowa State University, ²Anco Animal Nutrition Competence GmbH, ³Dept. of Animal Science, Iowa State University

Ruminant Nutrition: Supplements and Additives

Chair:

8:30 AM - 10:30 AM

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8:30 a.m. **Feedlot performance and carcass characteristics of steers fed diets containing steam-flaked grain and corn silage from Enogen® Feed Corn**

Adrian Baker ¹, Adrian Baker ², Lucas Barros ³, Vanessa Veloso ⁴

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kansas State University

8:45 a.m. **Evaluation of the effects of biochar on diet digestibility and methane production from growing and finishing steers**

Galen E. Erickson ¹, Melissa L. Jolly-Breithaupt ², James C. MacDonald ³, Andrea K. Watson ⁴, Hannah C. Wilson ⁵, Thomas M. Winders ⁶

¹Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,, ²University of Nebraska - Lincoln, ³University of Nebraska - Lincoln, ⁴University of Nebraska - Lincoln, ⁵University of Nebraska - Lincoln, ⁶University of Nebraska-Lincoln

9:00 a.m. **Impact of essential oils blend on beef cattle performance and carcass characteristics in diets with increasing corn silage inclusions**

Bradley M. Boyd ¹, Zachary E. Carlson ², Galen E. Erickson ³, Henry Hilscher ⁴, James C. MacDonald ⁵, Andrea K. Watson ⁶, Hannah C. Wilson ⁷

¹University of Nebraska - Lincoln, ²University of Nebraska - Lincoln, ³Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,, ⁴University of Nebraska - Lincoln, ⁵University of Nebraska - Lincoln, ⁶University of Nebraska - Lincoln, ⁷University of Nebraska - Lincoln

9:15 a.m. **Effect of eicosapentaenoic acid and docosahexaenoic acid supplementation on placenta and fetal liver mRNA, and fetal liver and brain fatty acids profile on early gestation in sheep.**

Hector Aaron. Lee ¹, Mario Francisco. Oviedo ², Alejandro E. Relling ³, Jose Alejandro. Roque ⁴

¹Facultad de Agronomía y Veterinaria, Universidad Autónoma de San Luis Potosí, México, ²The Ohio State University, ³Department of Animal Sciences, The Ohio State University, ⁴Facultad de Agronomía y Veterinaria, Universidad Autónoma de San Luis Potosí, México

9:30 a.m. **Ruminant Nutrition: Supplements and Additives Break**

9:45 a.m. **Effect of DHA and EPA supplementation during the first third of gestation on growth, metabolism and gene expression in hypothalamus in finished lambs**

Hector Aaron. Lee ¹, Mario Francisco. Oviedo ², Alejandro E. Relling ³, Jose Alejandro. Roque ⁴

¹Facultad de Agronomía y Veterinaria, Universidad Autónoma de San Luis Potosí, México, ²The Ohio State University, ³Department of Animal Sciences, The Ohio State University, ⁴Facultad de Agronomía y Veterinaria, Universidad Autónoma de San Luis Potosí, México

10:00 a.m. **Effects of blended microbial feed additives on receiving cattle performance and health**

Alfredo DiCostanzo ¹, Devan Paulus Compart ², Allison VanDerWal ³, Josh Zeltwanger ⁴
¹University of Minnesota, ²PMI Nutrition Additives, ³University of Minnesota, ⁴University of Minnesota

10:15 a.m. **Evaluation of the safety of an algal biomass as an ingredient in finishing cattle diets**

Bruce Brodersen ¹, Zachary E. Carlson ², Galen E. Erickson ³, Fred H. Hilscher ⁴, John Loy ⁵, Mitch Norman ⁶, Christian Rabe ⁷, Andrea K. Watson ⁸, Jonathan Wilson ⁹

¹University of Nebraska, ²University of Nebraska - Lincoln, ³Department of Animal Science, University of Nebraska-Lincoln, Lincoln, NE, USA,, ⁴University of Nebraska Lincoln, ⁵University of Nebraska - Lincoln, ⁶University of Nebraska-Lincoln, ⁷Evonik, ⁸University of Nebraska - Lincoln, ⁹DSM Nutritional Products

Breeding and Genetics Symposium: Defining a Robust Sow

Chair:

8:30 AM - 11:45 AM

201

8:30 a.m. **Breeding and Genetics Symposium: Defining a Robust Sow Introduction**

8:35 a.m. **Evolution of the Commercial Sow**

Gary Rohrer ¹

¹USMARC

9:10 a.m. **Field experience and challenges facing sow production today, industry strategies.**

Ronald T. Ketchem ¹

¹Swine Management Services, LLC

9:45 a.m. **Breeding and Genetics Symposium: Defining a Robust Sow Break**

10:00 a.m. **Defining a robust sow: How increases in sow productivity impact the biology of reproduction, lactation and body composition**

M. Todd. See ¹

¹North Carolina State University

10:35 a.m. **Dietary Management of the Transition Animal: Perspectives from Dairy Cows to Sows**

Robert Van Saun ¹

¹Penn State University

11:10 a.m. **Defining a Robust Sow: Swine nutrition perspective on reproduction and lactation**

Mariana Boscato Menegat ¹, Joel M. DeRouchey ², Steve S. Dritz ³, Robert D. Goodband ⁴, Mike D. Tokach ⁵, Jason C. Woodworth ⁶

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University, ⁶Kansas State University

Harlan Ritchie Symposium

Chair:

8:30 AM - 12:00 PM

203/204

8:30 a.m. **HARLAN RITCHIE SYMPOSIUM Intro**

8:35 a.m. **Mature Cow Size and Impacts on Cow Efficiency**

Paul A. Beck ¹, Paul A. Beck ²

¹Oklahoma State University, ²Oklahoma State University

9:20 a.m. **Impacts of dam age and milk production on cow/calf profitability**

Joslyn Beard ¹, Tasha King ², Travis Mulliniks ³

¹University of Nebraska, ²University of Nebraska, ³University of Nebraska

10:05 a.m. **Harlan Ritchie Symposium Break**

10:20 a.m. **Traceability**

John Butler ¹

¹Beef Marketing Group

11:05 a.m. **Current and future feedlot research needs: An industry perspective**

Ben P. Holland ¹

¹Cactus Feeders

11:45 a.m. **HARLAN RITCHIE SYMPOSIUM Panel**

Nonruminant Nutrition: Vitamins

Chair:

10:30 AM - 11:00 AM

207

10:30 a.m. Evaluation of different vitamin concentrations on grow-finish pig growth and carcass characteristics

Leandro Del Tuffo¹, Joel M. DeRouchey², Robert D. Goodband³, Cassandra K. Jones⁴, Mike D. Tokach⁵

¹Kansas State University, ²Kansas State University, ³Kansas State University, ⁴Kansas State University, ⁵Kansas State University

10:45 a.m. Effects of an antioxidant support technology and vitamin E on growth performance of naturally health-challenged nursery pigs

Sara Ebarb¹, James Jolliff², Kathryn Price³, Kari Saddoris-Clemons⁴, Sabrina Williams⁵

¹Cargill Premix & Nutrition, ²Cargill Premix & Nutrition, ³Cargill Premix & Nutrition, ⁴Cargill Premix & Nutrition, ⁵Cargill Premix & Nutrition

Nonruminant Nutrition: Feed Additives IV: Nursery

Chair:

10:30 AM - 12:00 PM

205/206

10:30 a.m. Effects of titrated levels of water soluble zinc amino acid complex on growth performance of nursery pigs

Pornpim Aparachita¹, Scott Carter², Jared Harshman³, Zach Rambo⁴, Afton Sawyer⁵, Terry Ward⁶

¹Oklahoma State University, ²Oklahoma State University, ³Oklahoma State University, ⁴ZinPro Corporation, ⁵Oklahoma State University, ⁶ZinPro Corporation

10:45 a.m. Effects of added dietary Zn and Cu or an essential oils blend in a nursery feeding program

Jon R. Bergstrom¹, Laura Greiner², Brandon Knopf³, Robyn Thompson⁴

¹DSM Nutritional Products North America, ²Carthage Innovative Swine Solutions, ³Carthage Innovative Swine Solutions, ⁴Carthage Innovative Swine Solutions

11:00 a.m. A bioactive, mineral-based feed additive improved growth performance in commercial nursery pigs

Kim Friesen¹, Rob Musser², Sue Sinn³, Ran Song⁴

¹NutriQuest, ²NutriQuest, ³NutriQuest, ⁴NutriQuest

11:15 a.m. Effects of feeding soluble fiber (dextrin) to pigs pre- and post-weaning on growth performance and volatile fatty acid (VFA) production

Clayton S. Chastain¹, Julie A. Feldpausch², Tim A. Johnson³, Kayla M. Mills⁴, Jorge Y.P. Palencia⁵, John S. Radcliffe⁶, Brian T. Richert⁷, Jacob A. Richert⁸, Allan P. Schinckel⁹, Morgan T. Thayer¹⁰, Carmen L. Wickware¹¹

¹Purdue University, ²Purdue University, ³Purdue University, ⁴Purdue University, ⁵Universidade Federal de Lavras – Brazil, ⁶Purdue University, ⁷Purdue University, ⁸Kansas State University, ⁹Purdue University, ¹⁰Purdue University, ¹¹Purdue University

11:30 a.m. **Effects of inclusion of a peptide based commercial product on the growth performance and fecal bacterial composition of nursery piglets**

Crystal L. Levesque ¹, Prakash Poudel ², Ryan S. Samuel ³, Benoit St- Pierre ⁴

¹South Dakota State University, ²South Dakota State University, ³South Dakota State University, ⁴South Dakota State University

11:45 a.m. **A bio-active, mineral-based feed additive improved growth performance and reduced severity of diarrhea in weanling pigs challenged with enterotoxigenic *Escherichia coli***

Dana Beckler ¹, Kim Friesen ², Rob Musser ³, Sue Sinn ⁴, Ran Song ⁵

¹GutBugs Inc., ²NutriQuest, ³NutriQuest, ⁴NutriQuest, ⁵NutriQuest

Raw Draft