

[Date]Monday, March 14, 2016

## **Gary Allee Symposium**

**Chair: Dustin Kendall, Prestage Farms, Inc**

Sponsor:  
Grand Ballroom

8:00 AM[tab][tab] **Welcome - Changing Consumer/Customer Demands, Opportunities for Nutritionists.**

8:05 AM[tab]89[tab] **Challenges of shifting consumer demand in the pork processing industry.**  
*C. Kaster\**, *Smithfield Foods, Kansas City, MO*

8:50 AM[tab]90[tab] **Electronic Sow Feeding (ESF): The Lemonade of Pen Gestation.**  
*T. D. Parsons\**, *Department of Clinical Studies, School of Veterinary Medicine, University of Pennsylvania, Kenneth Square, PA*

9:30 AM[tab]91[tab] **Crate-free sow housing and electronic feeding systems – a value proposition for improved sow nutrition.**  
*O. F. Mendoza\** and *A. M. Gaines*, *The Maschhoffs, LLC, Carlyle, IL*

10:05 AM[tab][tab] **Break.**

10:15 AM[tab]92[tab] **Exploring connections between metabolic profiles, stress responses and immune function.**  
*J. A. Carroll\**, *N. C. Burdick Sanchez*, and *P. R. Broadway*, *USDA-ARS, Livestock Issues Research Unit, Lubbock, TX*

11:00 AM[tab]93[tab] **Production Specific Marketing Programs: What Do They Mean for Nutritionists and How Do We Adapt?.**  
*M. J. Bertram\**, *First Choice Livestock, Urbandale, IA*

11:45 AM[tab][tab] **Panel Discussion.**

11:55 AM[tab][tab] **Concluding Remarks.**

## **David H. Baker Amino Acid Symposium**

**Chair: Nathalie L. Trottier, Michigan State University**

Sponsor:  
320

1:00 PM[tab][tab] **Welcoming Remarks.**

1:05 PM[tab]38[tab] **David H. Baker: A Study in Academic Scholarship.**  
*R. A. Easter\**, *University of Illinois at Urbana-Champaign, Mahomet, IL*

1:45 PM[tab]39[tab] **Comparison of the effects of reduced CP, amino acid supplemented diets on growth performance in swine.**  
*C. E. Vonderohe\**<sup>1</sup>, *K. M. Mills*<sup>1</sup>, *M. D. Asmus*<sup>1</sup>, *E. R. Otto-Tice*<sup>1</sup>, *C. V. Maxwell*<sup>2</sup>, *B. T. Richert*<sup>1</sup>, and *J. S. Radcliffe*<sup>1</sup>,  
<sup>1</sup>*Purdue University, West Lafayette, IN*, <sup>2</sup>*Department of Animal Science, Division of Agriculture, University of Arkansas, Fayetteville, AR*

2:00 PM[tab]40[tab] **Quantifying variable amino acid efficiencies in lactating sows.**  
*R. R. White*<sup>1</sup>, *S. Zhang*<sup>2</sup>, *N. Regmi*<sup>2</sup>, and *N. L. Trottier*<sup>2</sup>, <sup>1</sup>*Virginia Tech, Blacksburg, VA*, <sup>2</sup>*Michigan State University, East Lansing, MI*

2:15 PM[tab]41[tab] **Citrulline and de novo arginine synthesis in perinatal and young pigs.**

*J. C. Marini<sup>1,2</sup>, U. Agarwal<sup>1</sup>, I. C. Didelija<sup>1</sup>, B. Stoll<sup>1</sup>, and D. G. Burrin<sup>1</sup>, <sup>1</sup>USDA-ARS Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX, <sup>2</sup>Section of Critical Care Medicine, Baylor College of Medicine, Houston, TX*

2:55 PM[tab][tab] **Break.**

3:10 PM[tab]42[tab] **An update on modeling dose response relationships: accounting for correlated data structures and heterogeneous variance in linear and non-linear mixed models.**

*M. A. D. Goncalves, N. M. Bello<sup>\*</sup>, S. S. Dritz, M. D. Tokach, J. M. DeRouche, J. C. Woodworth, and R. D. Goodband, Kansas State University, Manhattan, KS*

3:50 PM[tab]43[tab] **Effects of standardized ileal digestible valine:lysine ratio on growth performance of 25- to 45-kg pigs under commercial conditions.**

*M. A. D. Goncalves<sup>1</sup>, M. D. Tokach<sup>1</sup>, S. S. Dritz<sup>1</sup>, N. M. Bello<sup>1</sup>, K. J. Touchette<sup>2</sup>, R. D. Goodband<sup>1</sup>, J. M. DeRouche<sup>1</sup>, and J. C. Woodworth<sup>1</sup>, <sup>1</sup>Kansas State University, Manhattan, KS, <sup>2</sup>Ajinomoto Heartland, Inc., Chicago, IL*

4:05 PM[tab]44[tab] **Determination of lysine adequacy on a population basis for growing pigs.**

*C. E. Zier-Rush<sup>1</sup>, C. Neill<sup>2</sup>, S. B. Jungst<sup>2</sup>, N. Matthews<sup>2</sup>, D. S. Rosero<sup>3</sup>, and R. D. Boyd<sup>1</sup>, <sup>1</sup>The Hanor Company, Inc., Franklin, KY, <sup>2</sup>PIC, Hendersonville, TN*

4:20 PM[tab]45[tab] **New Technologies Shaping Amino Acid Utilization in Animals.**

*P. J. Moughan<sup>\*</sup>, Riddet Institute, Massey University, Palmerston North, New Zealand*

## **Animal Behavior, Housing & Well-Being Symposium I**

**Chair: Jennifer A. Brown, Prairie Swine Centre**

Sponsor:  
302-303

8:30 AM[tab][tab] **Welcoming Remarks.**

8:40 AM[tab]10[tab] **The Role of Breeding in Positive Welfare Change.**

*S. P. Turner<sup>\*</sup>, R. Roehe, J. Conington, S. Desire, R. B. D'Eath, and C. M. Dwyer, SRUC, Edinburgh, United Kingdom*

9:25 AM[tab]11[tab] **Implementing animal well-being technologies, U.S. producer perspective.**

*A. E. DeDecker<sup>\*</sup>, Smithfield Hog Production Division, Rose Hill, NC*

10:10 AM[tab][tab] **Break.**

10:25 AM[tab]12[tab] **Engineering solutions to address challenges to animal well-being.**

*A. R. Green<sup>\*</sup>, University of Illinois at Urbana-Champaign, Urbana, IL*

11:10 AM[tab]13[tab] **Six questions for veterinarians.**

*J. Deen<sup>\*</sup>, Dept. of Veterinary Population Medicine, University of Minnesota, St. Paul, MN*

## **Breeding and Genetics Symposium**

**Chair: Juan P. Steibel, Department of Animal Science, Michigan State University**

Sponsor:  
304-305

8:30 AM[tab][tab] **Welcoming Remarks.**

8:35 AM[tab]34[tab] **Genomic prediction using a model based on haplotype clusters.**  
*S. D. Kachman\**, *University of Nebraska - Lincoln, Lincoln, NE*

9:10 AM[tab][tab] **Break.**

9:20 AM[tab]35[tab] **Advances in Genomic Selection and GWA.**  
*I. Misztal\**, *University of Georgia, Athens, GA*

9:55 AM[tab]36[tab] **Discovery of QTL using a QTL-Effects Model in a Multi-Generational Pedigree.**  
*R. L. Fernando\**<sup>1</sup>, *J. Zeng*<sup>1</sup>, *H. Cheng*<sup>2</sup>, *D. Habier*<sup>1</sup>, *A. Wolc*<sup>3</sup>, *D. J. Garrick*<sup>4</sup>, and *J. C. M. Dekkers*<sup>1</sup>, <sup>1</sup>*Iowa State University, Ames, IA*, <sup>2</sup>*Iowa State University, Ames, IA*, <sup>3</sup>*Hy-Line International, Dallas Center, IA*, <sup>4</sup>*Massey University, Palmerston North, New Zealand*

10:30 AM[tab]37[tab] **Modeling Networks for Prediction and Causal Inference in Quantitative Genetics and Genomics.**  
*G. J. M. Rosa\**, *University of Wisconsin-Madison, Madison, WI*

## David Schingoethe Symposium

**Chair: Daryl H Kleinschmit, Zinpro Corporation**

Sponsor:  
306-307

8:30 AM[tab]46[tab] **Modifying the composition of milk to increase marketability.**  
*D. J. Schingoethe\**, *South Dakota State University, Brookings, SD*

9:10 AM[tab]47[tab] **The History, Mechanism, and Modification of Milk Fat Synthesis in Ruminants.**  
*K. J. Harvatine\**, *Penn State University, State College, PA*

9:50 AM[tab]48[tab] **Milk composition and synthesis in dairy goats and sheep.**  
*M. Rovai\**<sup>1</sup> and *G. Caja*<sup>2</sup>, <sup>1</sup>*South Dakota State University, Brookings, SD*, <sup>2</sup>*Group of Ruminant Research (G2R), Universitat Autònoma de Barcelona, Bellaterra, Barcelona, Spain*

10:30 AM[tab]49[tab] **Physiological and molecular mechanisms associated with performance, immunometabolic status, and liver function in transition dairy cows fed rumen protected methionine or choline.**  
*Z. Zhou\**<sup>1</sup>, *M. Vailati Riboni*<sup>1</sup>, *O. Bulgari*<sup>1</sup>, *E. Trevisi*<sup>2</sup>, *T. A. Garrow*<sup>1</sup>, *J. K. Drackley*<sup>1</sup>, *P. Cardoso*<sup>1</sup>, *D. N. Luchini*<sup>3</sup>, and *J. J. Looor*<sup>1</sup>, <sup>1</sup>*University of Illinois, Urbana, IL*, <sup>2</sup>*Università Cattolica del Sacro Cuore, Piacenza, Italy*, <sup>3</sup>*Adisseo S.A.S., Alghero, Italy*

11:00 AM[tab]50[tab] **Control of bovine pyruvate carboxylase expression by saturated and unsaturated fatty acids and impact on fatty acid metabolism.**  
*K. E. Boesche\**, *S. L. Koser*, and *S. S. Donkin*, *Purdue University, West Lafayette, IN*

11:30 AM[tab]51[tab] **Postpartum protein nutrition for dairy cows.**  
*W. D. Weich\**<sup>1</sup>, *K. F. Kalscheur*<sup>2</sup>, and *D. P. Casper*<sup>1</sup>, <sup>1</sup>*South Dakota State University, Brookings, SD*, <sup>2</sup>*USDA-ARS Dairy Forage Research Center, Madison, WI*

## Growth, Development, Muscle Biology and Meat Science Symposium

**Chair: Chad Alan Stahl, F.A.C.T.S.**

Sponsor:  
318-319

8:30 AM[tab]140[tab] **Use of Visible and Near Infrared Spectroscopy to Predict Beef and Pork Quality.**  
*S. D. Shackelford\**, *D. A. King*, and *T. L. Wheeler*, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*

9:15 AM[tab]141[tab] **The quandaries of measuring meat quality.**  
*J. K. Apple<sup>\*1</sup> and J. W. S. Yancey<sup>2</sup>, <sup>1</sup>Department of Animal Science, University of Arkansas Division of Agriculture, Fayetteville, AR, <sup>2</sup>Department of Animal Science, University of Arkansas, Fayetteville, AR*

10:00 AM[tab]142[tab] **Differentiating Lamb Flavor.**  
*D. R. Woerner<sup>\*</sup>, T. W. Hoffman, J. D. Tatum, and K. E. Belk, Colorado State University, Fort Collins, CO*

## **Harlan Ritchie Symposium**

**Chair: W. J. Sexten, Certified Angus Beef LLC**

Sponsor:  
312-313

8:30 AM[tab][tab] **Welcoming Remarks.**

8:35 AM[tab]153[tab] **Alternative cow-calf production systems: Opportunities and challenges.**  
*R. J. Rasby<sup>\*1</sup>, J. M. Warner<sup>2</sup>, K. H. Jenkins<sup>3</sup>, and T. J. Klopfenstein<sup>2</sup>, <sup>1</sup>Department of Animal Science, University of Nebraska, Lincoln, NE, <sup>2</sup>University of Nebraska, Lincoln, NE, <sup>3</sup>University of Nebraska, Scottsbluff, NE*

9:20 AM[tab][tab] • **Implementing the 2015 Beef NRC Changes in Cow Herd Nutrition – Ron Lemenager.**

10:05 AM[tab][tab] **Break.**

10:20 AM[tab][tab] • **Implementing the 2015 Beef NRC Changes in Growing and Finishing Cattle – Galen Erickson.**

11:05 AM[tab][tab] • **Transparency in the Food System: Communicating Science to the Consumer - The Center for Food Integrity, J.J. Jones.**

## **Nonruminant Nutrition Symposium**

**Chair: Thomas E. Burkey, University of Nebraska**

Sponsor:  
316-317

8:30 AM[tab][tab] **Welcoming Remarks.**

8:50 AM[tab]267[tab] **What is ‘gut health’ and how do you quantify/measure it?.**  
*A. J. Moeser<sup>\*</sup>, North Carolina State University, Raleigh, NC*

9:20 AM[tab]268[tab] **New probiotic Bacillus strain improving gut health in piglets.**  
*B. K. Nielsen<sup>\*1</sup> and R. Cernat<sup>2</sup>, <sup>1</sup>Chr. Hansen A/S, Hørsholm, Denmark, <sup>2</sup>Chr. Hansen A/S, Hoersholm, Denmark*

9:35 AM[tab]269[tab] **Use of dietary carbohydrates as prebiotic in swine diets.**  
*R. T. Zijlstra<sup>\*1</sup>, J. M. Fouhse<sup>1</sup>, E. Beltranena<sup>2</sup>, A. M. H. Le<sup>3</sup>, and M. G. Gaenzle<sup>3</sup>, <sup>1</sup>Department of Agricultural, Food and Nutritional Science, University of Alberta, Edmonton, AB, Canada, <sup>2</sup>Alberta Agriculture and Forestry, Edmonton, AB, Canada, <sup>3</sup>University of Alberta, Edmonton, AB, Canada*

10:05 AM[tab]270[tab] **Impact of different high fiber diets on intestinal cell proliferation and differentiation in finishing pigs.**  
*Z. Huang<sup>\*</sup>, P. E. Urriola, G. C. Shurson, and M. Saqui-Salces, Department of Animal Science, University of Minnesota, St. Paul, MN*

10:20 AM[tab][tab] **Break.**

10:35 AM[tab]271[tab] **Effects of dietary supplementation of phytobiotics on growth performance and health status of growing-finishing pigs.**

*I. Park\**, *W. Parnsen*, and *S. W. Kim*, *North Carolina State University, Raleigh, NC*

10:50 AM[tab][tab] **Lysozyme as an alternative to antibiotics in swine feed.**

*W. T. Oliver\** and *J. E. Wells*, *USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*

11:20 AM[tab]272[tab] **Alternatives to antibiotics: biotechnological approach to deliver recombinant bioactive proteins.**

*E. Huynh*, *C. F. M. de Lange*, and *J. Li\**, *University of Guelph, Guelph, ON, Canada*

## **Animal Behavior, Housing, & Well-Being Symposium II**

**Chair: ,**

Sponsor:

302-303

1:30 PM[tab]23[tab] **Opportunities for monitoring and improving animal welfare using precision dairy monitoring technologies.**

*J. M. Bewley\**, *University of Kentucky, Lexington, KY*

2:15 PM[tab]24[tab] **Improving Welfare, Health and Productivity in Pigs by Optimizing Adaptation.**

*J. E. Bolhuis\** and *B. Kemp*, *Adaptation Physiology Group, Wageningen University, Wageningen, Netherlands*

## **Extension - Dairy Symposium**

**Chair: Jill L. Anderson, South Dakota State University**

Sponsor:

306-307

1:30 PM[tab]66[tab] **Midwest Dairy Processing Needs, Trends, and changes.**

*V. V. Mistry\**, *South Dakota State University, Brookings, SD*

2:00 PM[tab]67[tab] **Organic pasture versus conventional dairying – is there a difference in sustainability.**

*B. J. Heins\**, *University of Minnesota West Central Research and Outreach Center, Morris, MN*

2:30 PM[tab]68[tab] **Field observations of automated dairy calf feeding systems in the upper Midwest.**

*N. B. Litherland\** and *A. M. Hoskins*, *Vita Plus Corporation, Madison, WI*

3:00 PM[tab]69[tab] **Key Factors Affecting Automated Milking System Performance.**

*J. A. Salfer<sup>\*1</sup>* and *M. I. Endres<sup>2,1</sup>*, *<sup>1</sup>University of Minnesota, St. Cloud, MN, <sup>2</sup>University of Minnesota, Saint Paul, MN*

3:30 PM[tab]70[tab] **Effects of milk replacer feeding regimen to the pre-ruminant calf on crude protein utilization, digestibility, and growth.**

*C. E. Chapman\**, *University of New Hampshire, Durham, NH*

4:00 PM[tab]71[tab] **Potential Body Site Reservoirs for Coagulase Negative Staphylococcal Intramammary Infection in Heifers.**

*P. R. F. Adkins\** and *J. R. Middleton*, *University of Missouri, Columbia, MO*

4:30 PM[tab]72[tab] **Strategies for Programming the Lactation.**

*A. J. Carpenter\**, *Department of Animal Sciences and Industry, Kansas State University, Manhattan, KS*

## **Ruminant Nutrition Symposium**

**Chair: ,**

Sponsor:  
312-313

1:30 PM[tab][tab] **Welcoming Remarks.**

1:35 PM[tab]391[tab] **Veterinary Feed Directive (VFD) and its Practical Considerations for the Beef Industry.**  
*N. A. Pyatt\**, *G. D. Hufstедler*, *C. A. Guthrie*, *B. W. Hoffman*, and *K. Keffaber*, *Elanco Animal Health, Greenfield, IN*

2:20 PM[tab]392[tab] **Gut Bacterial Communities and Their Association with Production Parameters in Beef Cattle.**

*P. R. Myer*<sup>\*1</sup>, *J. E. Wells*<sup>2</sup>, *T. P. L. Smith*<sup>2</sup>, *L. A. Kuehn*<sup>2</sup>, and *H. C. Freetly*<sup>2</sup>, <sup>1</sup>*The University of Tennessee Institute of Agriculture, Knoxville, TN*, <sup>2</sup>*USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE*

3:05 PM[tab]393[tab] **Alternatives to Antibiotics.**

*J. P. Schoonmaker\**, *Purdue University, West Lafayette, IN*

## **Equine Welfare Symposium**

**Chair: Peggy A. Miller, Iowa State University**

Sponsor:  
304-305

8:30 AM[tab][tab] **Welcoming Remarks.**

8:45 AM[tab]52[tab] **Equine welfare in a competitive setting...what can 10+ years of research by the Equitation Science community tell us? (And what critical pieces are still missing?).**

*C. R. Heleski\**, *Michigan State University, East Lansing, MI*

9:30 AM[tab][tab] **Break.**

9:40 AM[tab]53[tab] **Equine welfare in a competitive setting: the human role.**

*K. L. Waite, Ph. D.\**, *Michigan State University, East Lansing, MI*

10:25 AM[tab]54[tab] **Perceptions of Equine Well-being in South Dakota.**

*H. K. Carroll\**, *R. C. Bott*, *S. L. Mastellar*, *L. R. McNeill*, and *G. D. Djira*, *South Dakota State University, Brookings, SD*

10:40 AM[tab][tab] **Break.**

10:50 AM[tab][tab] **Discussion.**

11:20 AM[tab][tab] **Concluding Remarks.**

## **Physiology Symposium**

**Chair: Patrick J. Gunn, Department of Animal Science, Iowa State University**

Sponsor:  
316-317

8:30 AM[tab][tab] **Welcoming Remarks.**

8:35 AM[tab]326[tab] **Fetal and Postnatal Nutritional Programming of Reproductive Performance in Ruminants.**  
*R. A. Cushman<sup>1</sup>, M. Soares<sup>2</sup>, M. Abedal-Majed<sup>3</sup>, A. S. Cupp<sup>3</sup>, G. A. Perry<sup>4</sup>, and H. C. Freetly<sup>1</sup>, <sup>1</sup>USDA, ARS, U.S. Meat Animal Research Center, Clay Center, NE, <sup>2</sup>Federal University of Santa Maria, Santa Maria, Brazil, <sup>3</sup>University of Nebraska-Lincoln, Lincoln, NE, <sup>4</sup>Department of Animal Science, South Dakota State University, Brookings, SD*

9:20 AM[tab]327[tab] **Postnatal Programming and Reproductive Development.**  
*F. F. Bartol<sup>1</sup> and C. A. Bagnell<sup>2</sup>, <sup>1</sup>Auburn University, Auburn, AL, <sup>2</sup>Rutgers University, New Brunswick, NJ*

10:05 AM[tab]328[tab] **Recent advances in boar management.**  
*W. L. Flowers<sup>\*</sup>, North Carolina State University, Raleigh, NC*

## **Teaching Symposium: Evolving the Animal Science Curriculum**

**Chair: Bryon R. Wiegand, University of Missouri**

Sponsor:  
401

8:30 AM[tab][tab] **Welcoming Remarks.**

8:35 AM[tab]394[tab] **Evaluation and Subsequent Modification of a Traditional, Land Grant Animal Sciences Curriculum.**  
*T. A. Strauch<sup>\*</sup>, M. J. Crosby, A. M. Meyer, M. F. Smith, and B. R. Wiegand, University of Missouri, Columbia, MO*

9:05 AM[tab]395[tab] **Changing Animal Science Curriculum at a Non-Land Grant University.**  
*J. W. Rickard<sup>\*</sup>, Illinois State University, Normal, IL*

9:35 AM[tab][tab] **Break.**

9:50 AM[tab]396[tab] **The Next Generation of Animal Science Students: Changing Demographics Dictate Curriculum Changes.**  
*J. A. Sterle<sup>\*</sup> and H. D. Tyler, Iowa State University, Ames, IA*

10:20 AM[tab]397[tab] **An administrator's perspective on meeting changing curriculum needs with limited resources.**  
*G. P. Lardy<sup>\*</sup>, North Dakota State University, Fargo, ND*

10:50 AM[tab][tab] **Panel Discussion.**

11:05 AM[tab]398[tab] **Evaluation of case-based reasoning to promote learning and swine industry interest in an undergraduate reproductive physiology course.**  
*A. T. Desaulniers<sup>\*</sup>, R. M. McFee, and B. R. White, University of Nebraska-Lincoln, Lincoln, NE*

11:20 AM[tab]399[tab] **Integrating Experiential Learning Into Animal Science Curriculum Through a Hands-On Beef Cattle Management and Marketing Contest.**  
*C. J. Malone<sup>\*</sup>, J. W. Rickard, and K. W. Tudor, Illinois State University, Normal, IL*