



MIDWEST SECTION MEETING

March 9-12 • Omaha, Nebraska

2025

Updated 11/1/24

LIST OF SYMPOSIA

David Baker Symposium: Challenges and potential solutions for addressing gut-level variables that affect amino acid utilization in swine – Sponsored by David Baker Appreciation Club

Accurate quantification of the fate of ingested amino acids is critically important to allow delivery of diets that support health and efficiency of swine. Chemical characteristics of amino acid sources, ranging from protein size and structure to the presence and level of synthetic amino acids can impact digestive processes and extent of amino acid digestion and absorption. Results of recent research illustrated the impact of the microbiome on digestion and fermentation of proteins and amino acids. Further, the status and requirements of the gut tissue itself can further influence the fate and extent of absorption of ingested amino acids. Finally, the presence and level of other dietary components, especially structural and fermentable dietary fiber, can affect amino acid utilization directly and through influencing the microbiome and gut integrity. Our goal in the 2025 Baker Symposium is for speakers to share their knowledge of these topics, consider challenges that result from estimating the associated variables, and provide their best solutions for helping nutritionists cope with these challenges.

- Dr. Wei Yun Zhu, Nanjing Agricultural University – Gut level interactions affecting AA metabolism
- Dr. Lee-Anne Huber, University of Guelph – Insights on the fate of protein bound and free amino acids and importance to protein metabolism in sows
- Dr. Neil Jaworski, Trouw Nutrition – Importance of the kinetics of protein digestion to the practical formulation of swine diets
- Dr. David Rosero, Iowa State University – Viable options to deal with variability in protein and amino acid sources, and pigs of varying status and sources

Genetics, Genomics and Bioinformatics Symposium: Genetics of disease and resilience

With the increase in high throughput phenotyping, one of possible uses is measuring resilience in disease stressed environments or otherwise. This symposium will review the genetic impacts to these resilience phenotypes.

- Dr. Luis Brito, Purdue University – Deriving resilience traits based on longitudinally recorded data in pigs and dairy cattle: from trait definition to genomic analyses
- Dr. Francesco Tiezzi, University of Florence, Italy – Genomic selection for improved resilience: a closer look to its implementation

Growth, Development, Muscle Biology and Meat Science Symposium: Beef-on-dairy hybrid production is gaining popularity in the Midwest and northern states

Beef-on-dairy hybrid production is gaining popularity in the Midwest and northern states. This practice can enhance sustainability in meat production by utilizing dairy heifers, potentially reducing the size of cow-calf herds. Additionally, the meat quality from these hybrids is known to be superior to that of pure dairy breeds. While the concept is widely recognized, scientific research on the subject is still emerging. Featuring speakers with expertise in meat and muscle biology and beef-dairy production, this symposium will provide valuable insights for both industry professionals and researchers.

Nonruminant Nutrition Symposium I: A nutritionist's guide for modulation of microbiome for combating enteric challenges and improving performance – Sponsored by Cargill

This symposium's objective is to provide a practical guide for nutritionists on how to implement macro- and micronutrients strategies to effectively modulate the microbiome for combating enteric challenges and improving pig performance.

- Dr. Andres Gomez, University of Minnesota – A robust and resilient microbiome against enteric pathogens
- Dr. Ehsan Khafipour, Cargill – A nutritionist's guide to microbiome modulation strategies
- Dr. Timothy A. Johnson, Purdue University – Microbiome modulation strategies
- Dr. Yanhong Liu, University of California, Davis – Microbiome modulation strategies
- Dr. Brooke Smith, Cargill – A holistic nutritional approach for modulation of microbiome

Nonruminant Nutrition Symposium II: Understand the importance and differences between beta-glucans in swine nutrition

There has been research over the past 25 years delineating the immune response to fungal, bacterial and algae beta-glucans. The response to each is quite varied. Emerging work on the "immune-training" effect of fungal beta-glucans is starting to demonstrate indirect effects on viral respiratory infections via macrophage activation. Meanwhile, other beta-glucans affect natural killer cells and anti-tumorogenic activity. Algae beta-glucans have a strong anti-inflammatory cytokine response in addition to an anti-viral response. This symposium reviewing these differences and helping scientists and applied nutrition experts understand the importance and differences between beta-glucans will help advance the development of functional nutrition and further reduce reliance upon antibiotic prophylaxis.

- Dr. Elisabeth Chasse, University of Aarhus, Denmark – Differences between the glucan sources that are available for animal nutrition
- Dr. Crystal Loving, USDA-ARS – Beta-glucan induced immunomodulation: Transitioning from cell-culture to the whole pig
- Ruurd Zijlstra, University of Alberta, Canada – Effect of dietary cereal β -glucan on digestive physiology, gut health, and growth in pigs
- Dr. Julie Schulthess, Phileo – Yeast beta glucans on swine nutrition

Physiology Symposium: Connecting the dots between cell signaling and production performance

This symposium will address why animal performance differs based on nutrition, season, or health status. Speakers will break down the idea of animal growth performance into the specific cellular responses at each tissue level and point out how targeting specific cell/tissues will result in overall improved production performance.

Harlan Ritchie Symposium: US beef cattle industry trends – *Sponsored by Harlan Ritchie Appreciation Club*

The US cattle industry is constantly changing and some key trends have emerged that should be understood by producers, consultants, researchers and students. When viewed over decades, biological trends include fewer, larger cattle (heavier when placed into feedyards and when harvested), heavier carcass weights, higher quality (marbling and eating satisfaction) and greater external fatness. The Ritchie Symposium will discuss the trends and will include presentations on identifying the ideal biological type for all segments and production systems, as well as use of new data types and new techniques to improve decision-making, as well as use of new data types and new techniques to improve decision-making.

- Dr. Pete Anderson, Midwest PMS LLC – US beef cattle industry trends
- Dr. Jared Decker, University of Missouri – Efficiency of different biological types, getting the most out of the resources available
- Dr. David Lalman, Oklahoma State University – The continued search for the elusive optimum cow
- Dr. Abram Babcock, Adams Land and Cattle – Which biological types work best for cattle feeders, value differences
- Dr. Rachel Carey, TELUS Agriculture and Consumer Goods – Beyond Controlled Research: Using Complex Data Sources to Aid in Decision-Making

Ruminant Nutrition Symposium: Evaluating the energy content of novel feed stuffs

- Dr. Richard Zinn, University of California, Davis – Using growth performance to estimate dietary NE levels of novel ingredients
- Dr. Kristin Hales, Texas Tech – Evaluating the energy content of novel feedstuffs using respiration calorimetry
- Dr. Michale Galyean, Texas Tech – Wrapping up: Experimental design, interpretation, and data management across techniques

Swine Translational Symposium: Status Update on Pressing Issues in U.S. Swine Production

- P.J. Corns, Global Swine Solutions / JBS Live Pork – U.S. Production Key Challenges and Opportunities
- Dr. Rafael Kummer, Videira, Santa Catarina – Sow Management and Nutrition – Brazilian Industry Perspective
- Hari Krishnan, USDA – Antinutritional Factors in SBM
- Dr. Matt Ritter, United Animal Health – The barn of the future: How do we get there?

Teaching and Extension Education Symposium: Undergraduate research experiences impacts on student career plans

This symposium invites faculty leading undergraduate research experience projects in Animal Science field to discuss how their research experiences are influencing student career exploration and plans. Will also highlight how undergraduate research experiences can influence graduate or other professional development recruitment in the Animal Science field.

- Dr. Melissa Merrill, North Carolina State University – Career Crossroads: Evaluating changes in Animal Science career plans after a food animal research experience
- Dr. Josh McCann, University of Illinois Urbana-Champaign – Beef was just the beginning: A perspective on undergraduate research
- Dr. Natasha L. Mast, Texas A&M University, Kingsville – Teaching with Experiential Learning in Animal Science
- Dr. Carolyn (Carrie) Hammer, North Dakota State University – Reaching non-traditional agriculture students through a multi-institution equine summer research program