

SCHEDULED SYMPOSIA BY DAY

MONDAY, MARCH 11, 2024: MORNING

Physiology Symposium: The Microbiome and the Host: Functional Role in Metabolism, Immunity, and Gut-Brain Axis – *Sponsored by Zoetis*

The idea for this symposium is based on the ever-expanding use of high-throughput technologies to characterize the microbiota structures and metabolites produced in the fields of livestock nutrition, immunology, and reproduction. Although the number of papers on this topic is not large, perusal of PubMed indicates there are ASAS members working on various aspects related to data science. Thus, a goal of this symposium is to highlight emerging work in this area.

- Dr. Adel Pezeshki, Oklahoma State University – The role of gut microbiota on regulation of growth and metabolism by branched-chain amino acids
- Dr. Jason M. Ridlon, University of Illinois at Urbana-Champaign – Another renaissance for bile acid gastrointestinal microbiology
- Dr. Timothy Johnson, Purdue University – The impact of early-life cecal microbiota transplantation on injurious behaviors in egg-laying chickens
- Dr. Dayakar Badri, Hill's Pet Nutrition Center – Nutrition and gut microbial ecology in companion animals
- Dr. Leluo Guan, University of British Columbia – Rumen microbiome and metabolome in dairy cattle performance

Ruminant Nutrition Symposium: Methanogenesis in Ruminants: Microbial action and approaches for whole animal measurement

- Dr. Elizabeth French, USDA-ARS Dairy Forage Research Center, Madison, WI – Targeting establishment of methanogens in the young ruminant
- Dr. Hilario C. Mantovani, Animal and Dairy Sciences, University of Wisconsin-Madison – Genetic targeting of the rumen microbiome and affiliated methanogens to assess methane emission in dairy cattle
- Dr. Kristin E. Hales, Animal & Food Sciences, Texas Tech University – The Science behind methane: Using respiration calorimetry head-boxes to estimate energy balance and methane emissions
- Dr. Logan Thompson, Animal Sciences and Industry, Kansas State University – Use of new technology to measure methane emissions

MONDAY, MARCH 11, 2024: AFTERNOON

David Baker Symposium: Roles of methionine in nutrition – *Sponsored by David H. Baker Appreciation Club*

Methionine is an indispensable amino acid that is needed in protein synthesis and in the synthesis of a number of other compounds used in the body. Methionine is also needed in the methyl cycle and as a precursor for cysteine and taurine and methionine is an important participant in one-carbon metabolism in the body. Results of recent research has indicated that methionine also is a functional amino acid that interacts with oxidative stress and is of particular importance for animals under heat stress. Methionine, therefore, is an important amino acids that is needed for more than simply protein synthesis and many new roles of methionine have been recently discovered. The 2024 Baker symposium will discuss the role of methionine on metabolism, oxidative stress, and the animal's abilities to adjust to heat stress. This topic seems particularly fitting because Dr. Baker conducted much research with sulfur containing amino acids and described many of the basic functions of methionine in metabolism.

- Dr. Shengfa Liao, Mississippi State University – Overview over Methionine Metabolism: Implications in Swine Nutrition and Health
- Dr. Jaap van Milgen, PEGASE, INRAE, Institut Agro, France – 1-carbon metabolism: Methionine and more
- **DPP Lecture:** Dr. Daniel Columbus, Prairie Swine Centre, Inc, Canada – Evidence of methionine effects on health and immune response of animals
- Dr. Xingen Lei, Cornell University – Role and mechanism of supplemental methionine in metabolic stress of broilers raised at high ambient temperature or stock density
- Jinyoung Lee – Postdoctoral Fellow, University of Manitoba – Effects of grinding method on ileal digestibility of amino acids in different short-season corn cultivars fed to growing pigs

Swine Translational Symposium: Pig Survival – current state, challenges, and opportunities

- Dr. Joel D. DeRouchey, Kansas State University – Key Learnings from the Improving Pig Survivability Project
- Dr. Josh Flohr & Dr. Noel H. Williams, Seaboard Foods – Pig Survival–Current State of the US Swine Industry
- Dr. Dan N. Hamilton, Genus PIC – Using genetics and technology to manage swine health and disease
- Dr. Nicholas Gabler, Iowa State University – Feeding and managing enteric challenged pigs
- Dr. Paul Yeske, Swine Vet Center – Is there anything we can do to lessen the severity of PRRSv?
- Dr. Roger Campbell, RG Campbell Advisory Pty Ltd – Group sow housing considerations for improved survival and productivity

TUESDAY, MARCH 12, 2024: MORNING

Animal Behavior, Health and Well-Being Symposium: Prop 12 has passed: What animal welfare regulations come next?

This symposium will cover what could come next regulation-wise, what do these regulations mean for animal welfare on farm, and how does this affect sustainability of the farm adhering to these regulations?

- Elizabeth Rumley, University of Arkansas – Animal welfare legal initiatives in the US
- Dr. Kristina M. Horback, University of California, Davis – What does Prop 12 mean for the swine industry
- Dr. John Radcliffe, University of Kentucky – Prop 12 has passed: What does that mean for sustainability?
- Dr. Liz Wagstrom, Wagstrom Consulting – Prop 12 passed, what research do swine producers need next?

Billy Day Symposium: Gene editing – Sponsored by Billy N. Day Appreciation Club

Continuing to honor the contribution of Dr. Billy N. Day to the field of reproductive physiology, this symposium investigates the basic mechanisms involved in the control of reproductive processes in farm animals and uses the knowledge to develop management techniques for increasing reproductive efficiency in animals.

- Dr. Randall Prather, University of Missouri – Gene editing: Where are we on campus and where can it go?
- Dr. Tom Rathje, DNA Genetics Phenomics for Management and Genetics – Gene editing: How are we thinking about it?
- Dr. Benjamin Beaton, Genus R&D – Gene editing on the farm: Current status and future prospects
- Dr. Maria Antonia Gil, University of Murcia, Spain – Gene editing: A European perspective
- **Bentley Lecture:** Dr. Hiroaki Funahashi, Okayama University, Japan – Gene editing: A Japanese perspective
- Dr. Alison Van Eenennaam, University of California, Davis – Gene editing: From the general public perspective

Equine Translational Symposium – Sponsored by Pack Pride Racing, LLC

Equine research topics are continuously expanding and evolving to increase our understanding of equine science. This symposium will discuss emerging trends in equine research related to equine health, diet, and research programs. Specifically, participants will be learning about veterinary highlights on equine health related to either equine parasitology or vitamin E for horses, the equine microbiome, and benefits of incorporating research into undergraduate equine programs.

- Dr. Burt Staniar, Pennsylvania State University – Building and maintaining an engaged undergraduate equine research team
- Dr. Amy Biddle, University of Delaware – A microbial perspective on equine nutrition
- Dr. Katie Young, Kentucky Equine Research (KER) – TBD

Genetics, Genomics and Bioinformatics Symposium: Phenomics for Management and Genetics

There is a growing interest in the use of sensors for large scale phenotyping for breeding and for precision management. This symposium will focus on management and breeding applications including research on high throughput phenotyping and phenotyping analytics.

- Dr. James Koltjes, Iowa State University – Evaluation of sensing technologies as indicator traits for feed intake in dairy cattle
- Dr. Isabella Condotta, University of Illinois at Urbana-Champaign – Automated animal biometrics acquisition for improved breeding
- Dr. Gota Morota, Virginia Polytechnic Institute and State University – Phenomics enabled quantitative genetic modeling of complex traits
- Dr. Joao Dorea, University of Wisconsin-Madison – Artificial Intelligence for high-throughput phenotyping and farm management

Harlan Ritchie Symposium – Sponsored by Harlan D. Ritchie Appreciation Club

- Dr. E. Mary Drewnoski, University of Nebraska-Lincoln – How do cover crops fit into beef production in a changing climate?
- Dr. Jason Nickell, Merck Animal Health – Can emerging technology improve beef cattle production in ways we never envisioned?
- Dr. Daniel D. Loy and Randie Culbertson, Iowa State University – High quality beef: How did we get to this level of production?

Nonruminant Nutrition Symposium I: Soybean Meal perspectives – from energy to sustainability

With the advent of increasing use of green biodiesel and sustainable aviation fuels, U.S soybean processing capacity is expected to increase 20-25% by 2025. In addition, recent research has demonstrated higher net energy/productive energy and stress reduction benefits of dietary soybean meal in commercial pork production system applications.

- Dr. Hans H. Stein, University of Illinois at Urbana-Champaign – Net energy of soybean meal
- Dr. Henrique Cemin, Hubbard Feeds – Soybean meal energy value under field conditions: Where are we at and where are we going?
- Dr. Shuai Zhang, MAFIC, China Agricultural University – Current and future usage of soybean meal in swine diets in China
- Zhaohui “Edward” Yang, University of Minnesota – Nutritional, feed safety, and environmental benefits and limitations of using soybean co-products in swine diets

TUESDAY, MARCH 12, 2024: AFTERNOON

Nonruminant Nutrition Symposium II: Fiber and its benefits in swine production

– Sponsored by AB Vista

AB Vista has been the pioneer in investigating the benefits of fiber in sow and nursery nutrition and its impact in livability, health and performance. Their technical team is working closely with several integrators in USA, Canada and Brazil guiding nutritionists on how to optimize the usage of fiber (non-digestible and digestible fiber) in the diet. They have also been partnering with a few Universities to investigate further the importance of understanding fiber in monogastric nutrition.

- Dr. Amy Petry, University of Missouri – Beyond solubility: Navigating the complex landscape of dietary fiber in swine digestion and physiology
- Dr. Nicholas Gabler, Iowa State University – The benefit and challenges of fiber in the nursery pig diet
- Joaquin Sanchez-Zannatta, University of Alberta – Effects of feeding barley-based diets differing in fermentable starch and fiber on nutrient digestion and body composition in weaned pigs
- Hannah Miller, University of Missouri – The impact of corn-based fiber on intestinal morphology and disaccharidase activity in growing pigs
- Dr. David Rosero, Iowa State University – Feeding the modern sow: Unlocking the value of dietary fiber
- Dr. Laura Merriman, AB Vista – Current limitations to implement fiber in U.S. sow and nursery diets; and nutritional strategies to support ideal fiber profile
- Garrin Shipman, South Dakota State University – Effects of post-MSC DDGS inclusion in gestation diets on total tract nutrient and energy digestibility compared to other fiber sources
- Erick Fuentes Cardona, University of Missouri – Assessing the impact of fiber and antioxidant supplementation during the periparturient period on gilt constipation, piglet viability, and body condition score

WEDNESDAY, MARCH 13, 2024: MORNING

Pork Quality Symposium: State of the Loin: Quality, Composition, Nutrition, Eating Experience, Value

- Glynn Tonsor, Kansas State University – The Economic Situation of the Pork Loin: Economic overview of the myriad factors affecting pork loin value
- Dr. David Newman and Mia Newman, National Pork Board – The Pork Demand Situation: Consumer data and insights on pork loin purchasing and use patterns
- Dr. Rhonda Miller, Texas A&M University – Consumer Perception of Pork Loin Palatability: Review of findings about mouth behavior and the influence of texture on consumer perceptions of pork loin
- Dr. Anna Dilger, University of Illinois – Consumer Perception of Pork Loin Palatability: Influence of meat science measures (pH, Color, Marbling) and end point cooking temperatures on consumer liking of the pork loin
- Dr. Elisabeth Huff-Lonergan, Iowa State University – How Has the Pork Loin Changed: Changes in muscle biology of the pork loin
- Dr. Chad Carr, University of Florida and Dr. David Newman, National Pork Board – Pork Benchmarking Survey: How do changes over time in retail pork loin products relate to consumer needs
- Dr. Kristin Hicks-Root, National Pork Board – Nutritional Value of Pork: Fat flavor research and communication strategies about the nutritional value of pork loin
- Collette Kaster, American Meat Science Association (AMSA) – Moderated discussion: Top scientific questions to be answered about the pork loin and top research needs