Updated 3/5/2025

SYMPOSIA LIST BY DAY

SUNDAY, JULY 6, 2025 – ALL DAY

ASAS-NANP Symposium: Mathematical modeling and data predictive analytics in animal nutrition – *Sponsored by National Animal Nutrition Program*
The symposium will focus on basic and advanced systems research in agriculture, including modeling approaches to animal nutrition, integration of research across disciplines, and data-driven and data science approaches to agricultural research and application. The symposium will be aimed primarily at younger scientists and pre-doctoral students interested in complex biological problems and data-driven applications relevant to animal nutrition and the food production system.

- Ignacio Martinez-Moyano, Argonne National Laboratory – Modeling the dynamics of complex systems: Some AI and HPC considerations
- Jennifer Ellis, University of Guelph – From empirical to mechanistic to AI models, making livestock production more efficient
- Ira Parsons, South Dakota State University – Hands-on 1: Applying Bayesian modeling to improve nutrient utilization in cattle
- Hector Menendez, South Dakota State University – Round-Table Discussions and Updates
- Yalong Pi, Texas A&M University – Hands-on 2: Using computer vision for efficient livestock production
- John Gottula, SAS Institute – Hands-on 3: Building a customizable chatbot using Large Language Models
- Luis Tedeschi, Texas A&M University – Round-Table Discussions and Updates

MONDAY, JULY 7, 2025 – ALL DAY

ARPAS Symposium: Water requirements for crop production, beef production, swine production and meat processing facilities – *Sponsored by American Registry of Animals Scientist*
This symposium will address water requirements for crop production, beef production, swine production, as well as requirements at meat processing facilities. A significant number of beef feedlots as well as swine confinement operations exist in the High Plains region of the United States along with packing facilities. In addition, dairies and dairy processing facilities are expanding in the area giving an added stress on water resources. With declining water levels in the Ogallala aquafer, there is a need to evaluate water requirements from conception through consumption.

MONDAY, JULY 7, 2025 – MORNING

Animal Breeding and Genetics Symposium I: Riding the CRISPR Wave to Understand and Manipulate Genome to Phenome in Livestock
This symposium will provide an immersive experience into the current cutting-edge technological advancements involving genome alteration in livestock species.

ASAS Public Policy Committee Symposium: Effectively Communicating Animal Science Anti-meat rhetoric
Effectively Communicating Animal Science Anti-meat rhetoric continues to propagate world-wide, through communication and messaging channels that target and influence all consumer audiences, especially those disconnected from agriculture. Often these communication efforts are well-funded, yet devoid of evidence-supported facts. Effectively disseminating evidence-based facts is a critical skill necessary for the benefit of an informed citizenry and to public policy decision-making. As scientists, we possess empirically-derived scientific evidence necessary to offset many challenges regarding animal use for food production and research activities, yet the messages do not always reach or resonate with key consumer audiences. To address this growing disconnect, and to help enhance student communication skills, the ASAS Public Policy Committee offers this workshop to build translational communication competencies and encourage members to proactively practice effective science communication to reach broad audiences and facilitate development of science-based infographs.

Comparative Gut Physiology Symposium: Changes in gut energy demands in response to stress
The gastrointestinal tract utilizes a disproportionate amount of energy relative to its size. While changing energy demands of the gut may not always directly alter the supply of nutrients to the periphery, the amount of energy/nutrients drawn from arterial supply by the gut does change. This can impact maintenance needs of the whole animal and influence production. This symposium will focus on how stressors such as heat stress, oxidative stress, and disease (for example) can influence resource needs in the support of gut function.

- Dr. Sarah Pearce, USDA-ARS – Methods to study effects of stress on gut permeability and energy consumption
- Dr. Adam Moeser, University of Michigan – Early life stress effects on development and function of the gut
- Dr. Michael Steele, University of Guelph – Impact of stress on aspects of ruminant gastrointestinal energy metabolism
- Dr. George Liu, USDA-ARS – FarmGTEx and Cattle Cell Atlas Projects: building reference omics datasets for future gut stress studies

MONDAY, JULY 7, 2025 – AFTERNOON

Animal Breeding and Genetics Symposium II: Academic and industry collaborations to advance animal breeding and genetic research
Close collaboration between academia and industry is essential to apply the results of animal breeding and genetic research to solve pressing problems in industry. In this symposium, speakers academia and breeding companies will address the questions: 1) what is the current big unresolved problem, 2) how is their academia-industry collaboration helping their work, and 3) how are they integrating the latest technologies.

Ruminant Nutrition Symposium: Gut permeability: What is it and what is the impact?

- Dr. Greg Penner, University of Saskatchewan – Factors that influence instances of gut permeability
- Dr. Sarah Pearce, USDA-ARS – Mechanisms of gut permeability
- Dr. Jon Schoonmaker, Purdue University – Models/Methods to assess gut permeability
- Dr. Victoria Sans Fernandez, Trouw Nutrition – Advantages and disadvantages, management of a permeable gut in livestock

TUESDAY, JULY 8, 2025 – ALL DAY

Swine Species Symposium/Nonruminant Nutrition: Antibiotic-free Pork Production
We currently do not have good argument to motivate producers to raise pigs without antibiotics. Most of the research done with pigs show either increase costs or mortality or both. It is more difficult to raise pigs without antibiotics than raise poultry due to many disease and biological factors. However, with recent discoveries of good natural alternatives and a combination of them, recent research show it is economic feasible to do it. Moreover, the economic benefits of raising pigs with antibiotics have not fully been explored/explained to swine producers. Many US retailers (i.e. Chipotle) are looking for other countries (Denmark) to supply them with RWA pigs. Pigs will be treated with antibiotics if they get sick because it is the humane thing to do.

- Dr. Rebecca Robbins, Genus, PIC – Past and present antimicrobial use in swine production: Raising pigs responsibly
- Dr. Timothy Johnson, Purdue University – Antibiotic resistance in animal microbiomes and pathogens
- Dr. Amy Petry, University of Missouri – Dietary fiber in nursery pigs: Balancing benefits and challenges
- Dr. Katelyn Gaffield, Kansas State University – Practical applications of acid-binding capacity-4 formulation strategies to improve nursery pig performance
- Dr. Kolapo Ajuwon, Purdue University – Dietary gestational and lactational live yeast supplementation to sows impacts milk and colostrum proteome profiles and piglet gut development

- Dr. Yanhong Liu, University of California, Davis – Impacts of short chain fatty acid derivatives on disease resistance and gut health of weaned pigs
- Dr. Jeff Meisner, Resilient Biotics – Microbiome-based therapeutics to combat respiratory disease

TUESDAY, JULY 8, 2025 – MORNING

Animal Health Symposium: Metabolomic Biomarkers of Animal Health

Companion Animal Symposium I: Therapeutic and Personalized Nutrition for Companion Animals

The demand for research in companion animal nutrition continues to grow as we seek a more thorough understanding of topics ranging from basic physiology to advanced nutritional biochemistry. In recent years, we have advanced our learnings on how dietetic measures can support disease prevention and recovery as well as how the diet can be tailored to help maintain, manage, or rehabilitate dogs and cats with unique physiological, metabolic, or therapeutic needs. Moreover, work being done in human health and nutrition disciplines affords companion animal researchers opportunities to extrapolate those findings and utilize humans as a model for personalized nutrition in dogs and cats. Contributions from clinicians, academics, and industry professionals (as well as collaborative efforts between these contingents) have fueled these advancements, and as such, the objective of this symposium is to facilitate the dissemination of emerging research associated with therapeutic and personalized nutrition that can help pet owners, veterinarians, and the pet food industry continue to innovate how we feed and manage our companion animals in the future.

- Dr. Avi Deshmukh, Royal Canin – Tailored nutrition: The science behind size specific diets for dogs
- Dr. Brett Loman, University of Illinois Urbana-Champaign – Personalized nutrition from pets to humans
- Dr. Sarah Moore, BluePearl Science – Accelerating veterinary clinical innovation through biobanking
- Dr. Joseph Bartges, University of Georgia – One Health: An interdisciplinary approach to improving health and nutrition of companion animals

Forages and Pastures Symposium: Utility of forage systems for carbon capture and flux

This symposium will highlight cutting-edge research on carbon dynamics in grazing systems, emphasizing practical strategies for sustainable livestock production. This symposium will provide a platform for engaging discussions among researchers, industry professionals, and producers, fostering innovative approaches to integrating forage and pasture systems into climate-smart agricultural strategies.

- Dr. Alan Franzluebbers, USDA-ARS – Grazing land management and soil texture as determinants of soil organic carbon storage
- Dr. Maria Lucia Silveira, University of Florida – Pasture's role in climate change mitigation

- Dr. Jasmine Dillon, Colorado State University – Use of Life Cycle Assessments for carbon monitoring in Beef Cattle Systems
- Dr. Sara Linneen, Elanco – Grazing management effects on carbon cycling in pasture-based systems

Livestock Symposium: The Essential Societal Role of Livestock, Today and Tomorrow
This symposium with introduce, in an appropriately condensed form, information from the 2022 International Summit on the Societal Role of Meat, addressing the following (from the Dublin Declaration of Scientists on the Societal Role of Livestock https://www.dublin-declaration.org): Challenges for Livestock; Livestock and Human Health; Livestock and the Environment; Livestock and Socioeconomic; and Outlook for Livestock. Material will be drawn from the 2024 International Summit on the Societal Role of Meat & Livestock as well. Those of us serving animal agriculture must become better informed about the "big picture" issues, "connecting the dots" across a variety of disciplines, building bridges between researchers, teachers, consumers and producers.

- Dr. Keith Belk, Colorado State University – 2024 International Summit: The Societal Role of Meat and Livestock
- Dr. Gbola Adesogan, University of Florida – Livestock's Vital Role in Nourishing the World
- Dr. Sara Place, Colorado State University – Sustainable Food Systems Require Livestock
- Dr. Paulo C. F. Carvalho, Federal University of Rio Grande do Sul, Brazil – Both/And: Integrating Cropping and Livestock Systems
- Dr. Peter Ballerstedt, Grass Based Health, LLC – Humanity's Existential Crisis: Malnutrition and chronic illness

Teaching/Undergraduate & Graduate Education Symposium: Mentoring That Works: Practical Strategies for Faculty and Graduate Success
A symposium on graduate student mentoring focused on actionable tips for success. Future faculty and faculty will benefit from this training, as will current students.

- Dr. Stephanie Hansen, Iowa State University – Strategies to tailor mentoring to the individual
- Dr. Rocío Melissa Rivera, University of Missouri – Preparing mentees for their future
- Dr. Mary Drewnoski, University of Nebraska-Lincoln – Innovating mentorship through idea brokering
- Dr. Dan Shike, University of Illinois Urbana-Champaign – Preparing undergraduates for graduate school

TUESDAY, JULY 8, 2025 – AFTERNOON

Cell Biology Symposium: Single-cell genomics of livestock animals – *Sponsored by ASAS-ADSA Northeast Section*

- Dr. George Liu, USDA-ARS – Single-cell omics in farm animals: exploring cellular insights
- Kimberly M. Davenport, Washington State University – Comparative single-cell transcriptomics uncovers key regulatory mechanisms in bovine placental development
- Dr. João Gabriel N. Moraes, Oklahoma State University – Single-Cell and Spatial Transcriptome Assessment of the Bovine Uterus Reveals Persistent Transcriptomic Alterations Following Postpartum Uterine Disease
- Dr. Susanta Behura, University of Missouri – A comparative analysis of single-cell open chromatins in the embryonic brain between chicken and turkey
- Dr. Christopher Tuggle, Iowa State University – Community resources for discovering cel type specific functions in the pig

Contemporary and Emerging Issues Symposium I: The role of livestock in a circular bioeconomy

Production, Management and Environment Symposium: Livestock Systems

- Dr. Bradley J. Heins, University of Minnesota – Diversifying Dairy Farm Income Through Agrivoltaics
- Dr. Robin White, Virginia Tech – Precision feeding technologies for health and welfare: practice, promise, and pie-in-the-sky
- Dr. Yijie Xiong, University of Nebraska-Lincoln – What are the barriers to adopting virtual fencing technology?

WEDNESDAY, JULY 9, 2025 – MORNING

Animal Behavior and Well-Being Symposium: Precision feeding for improving livestock health and well-being

This symposium will focus on the development and use of precision feeding technologies for improving livestock health, welfare, and productivity. Speakers will cover a range of relevant topics, including current and future precision feeding developments, effective use of behavior for evaluating new feeding technologies, the role of animal individuality and emotion in precision feeding success, application of precision technologies for improving livestock outcomes, and methodologies currently being used to evaluate feeding behavior in non-livestock species.

- Dr. Robin White, Virginia Tech – Precision feeding technologies for health and welfare: practice, promise, and pie-in-the-sky
- Dr. Courtney Daigle, Texas A&M University – TBD

- Dr. Rodolfo Cardoso, Texas A&M University – Precision feeding for programming brain development and reproductive performance of beef heifers
- Dr. Qingchun Tong, UTHealth Houston – Feeding regulation and body weight in rodents
- Dr. Isabella Condotta, University of Illinois Urbana-Champaign – Tailoring nutrition with AI: Behavioral Insights for precision feeding and livestock welfare

Beef Species Symposium: Heavier carcass weights: Strategies to maximize efficiency in current market signal

Beef cattle heavier carcass weights have been observed in the US Beef Industry due to positive market signals towards such strategy. Despite any particular reason for such continuous trend, it certainly encumbers: a) additional feedlot days on feed and consequently extra feeding expenses; b) implementation of feeding strategies and/or technologies focusing on phase-feeding rather than the entire feeding period; c) beef cattle selection for heavier weaning weights and consequently larger cow body size; d) strategies to improve beef cattle projection models inside the feedlot; and e) the need for prediction models to improve accuracy in the prediction of carcass composition and the composition of gain. The current Symposium brings experts to brainstorm such topics by discussing: a) limit or programmed-feeding approaches to feedlot animals on extended days on feed; b) the relevance of nutrient density and phase-feeding effects assuming the extra labor/burden created by additional diets in the feeding system; c) a historical perspective and the impact of cow-herd selections on the return to the cow-calf sector, as well as future selection trends (driven by heavy carcass weights) potential impacts on cow-calf profitability; d) strategies currently implemented by feedlots to improve accuracy of carcass gain predictions, lot homogeneity, and optimum days on feed; and e) a historical perspective of the beef cattle empty body fat prediction, its use, and items pertaining to such models that could be improved

- Dr. Zachary Smith, South Dakota State University – Limit feeding/programed-fed cattle as strategy for improved economic returns of heavy carcasses
- Dr. Kendall Samuelson, West Texas A&M – Nutrient density upon arrival and phase-feeding effects on economic returns of fed cattle
- Dr. Dan Shike, University of Illinois Urbana-Champaign – How to reconcile the demand for heavy carcass weights with a sustainable cow body size?
- Dr. Mike Brown, Elanco – Carcass premiums and discounts: considerations in projections for extended days on feed
- Dr. Blake Foraker, Texas Tech University – Updated modeling for empty body fat to better represent current larger carcass weights

CSAS Symposium I: – *Sponsored by the Canadian Society of Animal Science*

Horse Species Symposium: Current and Future Outlook on Equine Industry, Research Trends, and Opportunities: How to promote a sustainable field into the future
The main objective of this symposium is to attract a broad range of interest during an ESS year to a symposium that elicits interest from industry professionals, veterinarians, university faculty, and policy makers. Invite speakers from these varied backgrounds will provide unique perspectives on this topic, while prompting thought-provoking conversation during a closing roundtable focused on elevating equine science and research opportunities into the future. We believe that this unique symposium will encourage those with an equine interest to attend and learn about challenges and opportunities such as those around funding sources, governmental regulations, and industry perspectives.

ASAS Publications Committee Symposium: Perspectives on Peer Review

- Elisabeth Huff Lonergan, EIC, Journal of Animal Science – Building trust in science: How editors and reviewers uphold scientific integrity
- Dustin Boler, EIC, Translational Animal Science – Building trust in science: How authors build confidence in scientific integrity during the review process
- Sarah Reed, EIC, Animal Frontiers – Building trust in science: Considerations from a reviewer's perspective

WEDNESDAY, JULY 9, 2025 – AFTERNOON

Companion Animal Symposium II: Longevity and Quality of Life: A Comparative Assessment
The anthropomorphism of dogs and cats has shaped how pet owners perceive the nutritional needs of their companions. The evolution of pet food products that transcend basic nutrition has become a powerful catalyst for both industry innovation and scientific exploration. With the growing population of senior dogs and cats in North American households, there is an increasing demand among pet owners for pet food products that support healthy aging and enhance the overall well-being of their senior pets. However, this rising demand has presented significant challenges in substantiating these claims with rigorous scientific evidence. The study of aging and longevity is far from new; researchers have long relied on various model organisms to unravel the complexities of healthy aging, often with the goal of translating these insights into human health applications. Research has been focused on exploration of the dietary and environmental factors that contribute to longevity, biomarker discovery, utilization longitudinal studies to deepen our understanding of what fosters healthy aging, and others. Yet, the focus has largely been on human aging, leaving a gap in the application of these findings to companion animals. By embracing a comparative perspective on the latest scientific discoveries in aging, and by drawing on the insights gained from diverse organisms and animal models, we can enrich our understanding of longevity and aging, thereby shaping the future direction of research and discovery within the companion animal helm. The purpose of this symposium is to serve as a platform for the dissemination of cutting-edge knowledge and to spark discussions on scientific discoveries in the field of longevity, all viewed through a comparative lens.

- Dr. Matt Kaeberlein, Optispan – The Dog Aging Project: An open science study of aging in companion dogs
- Dr. Alexander Tyshkovskiy, Harvard Medical School – Molecular mechanisms of longevity in mammals
- Dr. Allison Millican, Zinpro – Unleashing the power of trace minerals for healthier pets
- Dr. Daniella Chusyd, Indiana University Bloomington – Aging: What we can learn from elephants

CSAS Symposium II:– *Sponsored by the Canadian Society of Animal Science*

Physiology And Endocrinology Symposium: Advances in Reproductive Physiology: Unraveling the High Fertility Cycle in Cattle

This symposium will highlight how the individual portions of fertility are all integrated when thinking of overall herd fertility.

- Dr. Jessica C. Motta, University of Maine – Ovarian reserve and fertility: Bridging basic science and reproductive management
- Dr. Cecily V. Bishop, Oregon State University – Mechanisms of luteal formation and maintenance
- Dr. Mario Binelli, University of Florida – Importance of sex-steroids to uterine receptivity for pregnancy in beef cattle
- Dr. Saulo Zoca, University of Tennessee – Bull management: From sperm quality to herd fertility
- Dr. Nicholas Wege Dias, Kansas State University – Impact of stress on reproductive efficiency

Small Ruminant Symposium: Technology/precision ag transforming the sheep industry

- Dr. Andrew Hess, University of Nevado, Reno – Leveraging GPS Collar Technology and Temperature Sensors To Enhance Understanding of Sheep Behavior and Land Use In Extensive Production Systems
- Dr. Jonathan Spiess, USDA – TBD

USDA Grants Writing Workshop

The workshop will focus on topics related to where in USDA to apply for particular grants, the process for application, good ideas and good writing, review and funding.

- Robert Godfrey, USDA – NIFA Overview: Organization and Function
- Amber Campbell, USDA – NIFA Competitive Funding Opportunities for Animal Science
- Mark A. Mirando, USDA – Grant Writing Tips for Success: Ten things you must do

THURSDAY, JULY 10, 2025 – MORNING

Contemporary and Emerging Issues Symposium II: Artificial Intelligence in Animal Science and Animal Agriculture Opportunities and Challenges

Artificial Intelligence (AI) stands to influence many aspects of Animal Science and Animal Agriculture. For these reasons, this symposium will addresses the use of AI in large-scale data management, effective communication and dissemination of information, and the ethical considerations around the use of AI in Animal Science and Animal Agriculture.

- Dr. Michael Robben, University of Illinois Urbana-Chamapign – Generative AI in data analysis for animal science
- Dr. Karun Kaniyamattam, Texas A&M University – Using AI to address large-scale industry challenges
- Dr. Stephanie Hansen, Iowa State University – Ethical considerations and AI education in animal science

Growth and Development Symposium: Muscle and Adipose Tissue Development in Meat Species: Genetic and Physiological Responses to Thermal Challenges

The ability of livestock to adapt to environmental stressors, particularly thermal challenges, is crucial for maintaining growth, development, and productivity in increasingly variable climates. Rising global temperatures and the expansion of livestock production into regions with extreme or fluctuating temperatures, such as the subtropics, present new challenges for the regulation of muscle and adipose tissue development. Thermal stress can disrupt normal physiological processes, influencing muscle growth, fat deposition, and overall animal performance. Understanding how livestock species respond to these conditions at the genetic and physiological levels is essential for developing management strategies that promote resilience and efficiency in production systems. This symposium will provide a platform to discuss these critical issues. Experts will present the latest research on how thermal stress (heat and/or cold stress) affects muscle and adipose tissue development in meat species, the genetic and physiological mechanisms involved, and potential strategies for mitigating the negative impacts of extreme climates. As global temperatures rise, and climate conditions become more extreme, understanding how thermal stress impacts livestock growth is essential for livestock production.

- Dr. Jongkyoo Kim, Michigan State University – Temperature stress and its impact on cellular responses in muscle and adipose tissue of beef cattle
- Dr. Jay Johnson, Missouri State University – Heat stress and bioenergetics in sows and their offspring: implications for growth and development
- Dr. Melissa Hannas, Federal University of Viçosa – Nutritional requirements related to thermal conditions and modulation of muscle and adipose tissue development in modern broilers
- Dr. Luiz Brito, Purdue University – Characterizing the genomic background of climatic resilience in pigs through quantitative epigenetic models, novel traits, and biological validation studies