



## SCHEDULED SYMPOSIA BY DAY

### WEDNESDAY, JULY 14, 2021 – ALL DAY

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**ASAS-NANP Pre-Conference Symposium:** Mathematical Modeling in Animal Nutrition: Training the Future Generation in Data and Predictive Analytics for a Sustainable Development—Basic Training

- Dr. Aline Remus, Agriculture and Agri-Food Canada – Opportunities and Limitations of Modeling and Data Analytics for Precision Livestock Farming
- Dr. Hector M. Menendez, South Dakota State University – Application of Precisions Sensor Technologies, Real-Time Data Analytics, and Dynamic Models on Extensive Western Rangeland Grazing Systems
- Suresh Neethirajan, Wageningen University & Research – Mapping Resilience Indicators and Measuring Emotions of Farm Animals Using Sensor Data
- Marc Jacobs, Trouw Nutrition – The Adoption of AI in the Core Scientific Cycle of Feed Research
- Charlotte Gaillard, PEGASE, INRAE, Institut Agro – Integrating Mechanistic Models with AI for Precision Feeding of Sows
- Dr. Charles (Skuk) Jones, Climate Interactive – EnROADS - Overview of Climate Change Modeling
- Dr. Gota Morota, Virginia Tech University – Hands-On: Interactive Visualization of Agricultural Science Data using R Shiny
- Dr. Dan Tulpan, University of Guelph – Hands-On: Machine Learning Models with Weka

### WEDNESDAY, JULY 14, 2021 – AFTERNOON

**Animal Behavior and Well-Being Symposium:** Necessity is the Mother of Invention: Animal Management in Response to Natural Disasters

- Dr. Tiffany Lee, North American Meat Institute – Cattle Management at the Slaughterhouse during a Pandemic
- Dr. Anna K. Johnson, Iowa State University – Innovative Strategies for Managing Swine Welfare during Natural Disasters
- John B. Gaughan, The University of Queensland, Gatton – TBD
- Alexandra Protopopova, University of British Columbia – The Impact of Global Disasters on Our Pets: Lessons from COVID-19



**Growth and Development Symposium:** Influence of Environmental Temperature on Growth and Development of Tissues and Animal Production

- Dr. Shihuan Kuang, Purdue University – Single Cell RNA-sequencing Reveals a Role of Lipid Metabolism in Muscle Satellite Cells
- Dr. Min Du, Washington State University – Maternal Impact on Fetal Muscle and Adipose Tissue Development
- Dr. Robert P. Rhoads, Jr., Virginia Tech – TBD
- Dr. Sandra G. Velleman, The Ohio State University – Response of Chicken and Turkey Pectoralis Major Muscle Satellite Cells to Temperature Variation

**Ruminant Nutrition Symposium I:** Reducing the Environmental Impact of Ruminants—A Nutritional Approach

- Dr. Ermias Kebreab, University of California, Davis – Green House Gas Emissions Mitigation Strategies
- Dr. Alexander N. Hristov, Pennsylvania State University – Enteric Methane: Current Measurement and Assessment Techniques
- Dr. Andre F. Brito, University of New Hampshire – Nutrient Movement in the Environment: Confined versus Grazing Systems
- Dr. Robin R. White, Virginia Tech University – Nutritional Strategies to Enhance Nutrient Retention in Cattle, Fields, and Farms
- Dr. Alan Rotz, USDA-ARS – Integration of Nutrition with Air and Water Environmental Concerns

## THURSDAY, JULY 15, 2021 – ALL DAY

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**Physiology and Endocrinology Symposium:** Factors Affecting Reproductive Performance in Ruminants

- Dr. Milan P. Shipka, University of Alaska, Fairbanks – W112 Reproductive Performance in Domestic Ruminants: 50 Years of Accomplishment: A USDA-NIFA Multistate Research Project
- Dr. Jennifer Hernandez Gifford, New Mexico State University – Effects of Inflammatory States on Ovarian Biology and Oocyte Competence
- Dr. Rebecca Poole, Texas A&M University – Reproductive Microbiomes as Predictors of Fertility in Beef Cattle
- Dr. Caleb Lemley, Mississippi State University – Characterizing Vaginal Bacterial Community Composition in Brangus Heifers
- Dr. Dawit Tesfaye, Colorado State University – The Role of Extracellular Vesicles in Mitigating the Effect of Heat Stress
- Dr. Anna C. Denicol, University of California, Davis – Physiological responses to heat stress of Holstein heifers carrying the SLICK1 allele of the prolactin receptor (PRLR) gene



- Dr. Kristen E. Govoni, University of Connecticut – Effects of Dam Nutrition on Offspring Metabolism
- Dr. Felipe Cardoso, University of Illinois – Effects of Transition Period Nutrition on Uterine Health
- Dr. John B. Hall, University of Idaho – Effect of Dam Nutrition on Offspring Reproductive Performance
- Dr. Thomas W. Geary, USDA-ARS, Fort Keogh ARRL – Effects of Nutrition on Bull Fertility
- Dr. Ky G. Pohler, Texas A&M University – Maternal and Paternal Contributions to Fertility
- Dr. Russ Anthony, Colorado State University – Using in Vivo RNA Interference to Investigate Ruminant Placental Function
- Dr. Thomas R. Hansen, Colorado State University – W4112 Reproductive Performance in Domestic Ruminants: The Next 50 years--A USDA-NIFA Multistate Research Project

## THURSDAY, JULY 15, 2021 – MORNING

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**ARPAS Symposium:** Building a Resilient Food Production System in the US: What Covid-19 and Other Black Swan Events Have Exposed about Modern Food Production

- Dr. John D. Anderson, University of Arkansas – Lessons from the COVID-19 Pandemic for Food Supply Chains
- Dr. Ben Holland, Cactus Feeders – Cattle Production's Response to Packing Capacity Disruption
- Dr. Jason Apple, Texas A&M University, Kingsville – Can Regionalized Livestock Production and Meat Packing Meet the Food Needs of Today's Consumers?

**Companion Animals Symposium I:** Experimental Design and Statistics Applied to Companion Animal Nutrition

- Dr. Nora M. Bello, Kansas State University – Statistics for Reproducible Research in Companion Animal Nutrition
- Dr. Sandra Rodriguez-Zas, University of Illinois Urbana-Champaign – Analytical Strategies for Survey Data in Pet Nutrition and Management
- Dr. Emma Bermingham, AgResearch Limited – The Use of Meta-analysis in Companion Animal Research: A Focus on Energy Requirement
- Dr. Jennifer Ellis, University of Guelph – Nutrition Modeling: What Can the Pet Field Learn (Or Steal) from Recent Directions in Other Species?



### **Ruminant Nutrition Symposium II: Frontiers in Ruminant Nutrition: A Historical Context**

- Dr. Kris Johnson – Energy Metabolism
- Dr. Gerald B. Huntington, North Carolina State University – A Century and A Half of Nitrogen and Protein Metabolism in Ruminants
- Dr. Jerry W. Spears, North Carolina State University – Mineral Metabolism
- Dr. Fredric N. Owens, Pioneer Hi-Bred Int'l – Anomalies of Carbohydrate Digestion and Metabolism by Ruminants

### **SSASAS SERA 41 & SCC 81 Joint Symposium: Legume Use in Southeastern Forage Systems**

- Dr. Jennifer Tucker, University of Georgia – Incorporating Alfalfa into Warm-Season Grass Systems in the Southeast
- Thomas Terrill, Fort Valley State University – Use of sericea lespedeza (*Lespedeza cuneata*) as a nutraceutical forage for livestock
- Christopher Prevatt, University of Florida – Economics and Feasibility of Legume Inclusion in Southeastern Perennial Forage-Based Systems

### **Teaching/Undergraduate and Graduate Education: Virtual World of Learning: Inclusivity and Engagement in Undergraduate and Graduate Animal Science Programs**

- Liv Gjestvang, The Ohio State University – Motivation of Faculty and Students in an Online Teaching Environment
- Dr. Andy D. Herring, Texas A&M University – Walk the Talk – Teaching is Still Teaching– Just Expanding Your Tool Box
- Dr. Janice M. Siegford, Michigan State University – Supporting Virtual Student Inclusivity
- Paige Linne, Texas A&M University – Hiflex Delivery: How Do You Turn It Around When Things Go Bad?
- Dr. Shannon M. Archibeque-Engle, Colorado State University – Diverse, Equitable, and Inclusive Teaching: In Person and Virtually



## **THURSDAY, JULY 15, 2021 – AFTERNOON**

### **Beef Species Symposium: Opportunity and Role of Beef x Dairy Crossbreeding Systems in US Beef Production**

- Dr. Justin Benavidez, Texas A&M Agrilife Extension – Economics and Role of Beef on Dairy Animals in the Beef Supply Chain
- Dr. Vinicius Machado, Texas Tech University – Management Strategies to Optimize Health and Performance of Pre-Weaned Calves
- Dr. Tara L. Felix, Pennsylvania State University – What We Think We “Know” about Beef x Dairy Crossbred Cattle in the Feedlot
- Dr. Luis Burciaga-Robles, Feedlot Health Management Services – Beef x Dairy Animals in the Beef System: Industry Observations
- Dr. Dale R. Woerner, Texas Tech University – Packer and End-Product Considerations

### **Comparative Gut Physiology Symposium: Parent-offspring Integration: Focus on Gut Health**

- Dr. Adam Moeser, Michigan State University – Early Developmental Exposure to Stress and Programming of Lifelong Gut and Immune Function
- Dr. Kjersti M. Aagaard, Baylor College of Medicine – Early Establishment of the Human Gut Microbiome—A Tale of Moms, Their Diets, and Babies Guts
- Dr. Michael Steele, University of Guelph – Can Maternal Nutrition in Dairy Cattle Impact Gut Health in Dairy Calves?
- Dr. Stafford Vigers, University College Dublin, Ireland – The Potential for Maternal Nutrition to Influence, Health, Development and Subsequent Lifetime Performance of the Pig
- Dr. Nadia Everaert, Gembloux Agro-Bio Tech, University of Liège, Belgium – Effect of Sow Nutrition on Offspring’s Gut Microbiota
- Dr. Rajesh Jha, University of Hawaii at Manoa – Maternal Nutrition and In Ovo Feeding Affect Gut Health and Performance of Poultry





**CSAS Symposium I: Prospects for Exploiting Epigenetic Effects in Livestock Production**  
(Sponsored by The Semex Alliance)

- Dr. Marcio S. Duarte, Federal University of Vicosa, Brazil – Fetal Programming and Meat Quality
- Dr. Marc Andre Sirard, University of Laval, Canada – DNA Methylation Across Generation in Bovine
- Dr. Luiz Fernando Brito, Purdue University – Genome-wide DNA Methylation Profiling in in Utero Heat-stressed Pigs as Measured by Whole-genome Bisulfite Sequencing
- Dr. Ying Yu, China Agricultural University – Studies of Sperm DNA Methylation Variations and Their Potential Regulations on Production and Reproduction Traits in Cattle and Pigs
- Dr. Aleksandra Dunisławska, UTP University of Science and Technology, Poland – Epigenetic Changes in Poultry Due to Reprogramming of the Gut Microbiota at an Early Stage of Embryonic Development

**SSASAS SCC 81 Symposium: Parasite Management in Livestock Systems**

- Dr. Christine B. Navarre, Louisiana State University – Best Management Practices for Parasite Control in Beef Herds in the Southeastern United States
- Dr. Niki Whitley, Valley State University – Multi-Species Grazing for Control of Gastrointestinal Nematodes–A Review
- Dr. James E. Miller, Louisiana State University – BioWorma as an Aid for Controlling Ruminant Nematode Parasites

**FRIDAY, JULY 16, 2021 – ALL DAY**

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**Contemporary and Emerging Issues Symposium I: Public Policy: Rethinking/Reexamining Grand Challenges Within the Animal Sciences–A Scorecard and Recalibration**

- Don R. Mulvaney, Auburn University and Dr. Charles F. Rosenkrans, Jr., Clemson University – Teaching and Workforce Readiness
- Dr. Courtney Daigle, Texas A&M University – Optimizing animal welfare in a socially acceptable and sustainable manner: The ASAS Grand Challenge that requires moral self-reflection and scientific calibration.
- Fernando Biase, Virginia Tech – Breeding and Genetics
- Dr. Guoyao Wu, Texas A&M University – Beef as a Functional Food for Improving Human Nutrition and Health
- Dr. Dave E. Gerrard, Virginia Tech – Growth
- Thomas E. Spencer, University of Missouri – Grand Challenges in Domestic Agricultural Animal Reproduction
- Dr. Frédéric Leroy, Vrije Universiteit Brussel, Belgium – Sustainability of Animal Production



## **FRIDAY, JULY 16, 2021 – MORNING**

### **Animal Breeding and Genetics Symposium I: Generation of Novel Phenotypes from Automated Systems**

- Dr. Christine Baes, University of Guelph – Genetics Reloaded: Large-Scale Collection of Novel Phenotypes in Turkeys
- Dr. James E. Koltes, Iowa State University – Opportunities to Apply and Learn from Deep Phenotyping in Dairy Cattle
- Dr. Matthew Garcia, Utah State University – Using GPS and Genomic Technology to Provide a More Accurate Estimate of Bull Power in Western Intermountain Beef Systems
- Dr. Benny Mote, University of Nebraska – Phenotyping of Individual Pigs Utilizing Computer Vision Offers Insights for Novel Trait Generation

### **Companion Animals Symposium II: Brewing and Fermented Ingredients Used in Pet Nutrition**

- Charles Edwards, Washington State University – Food Fermentation Basics
- Julang Li, University of Guelph – Bioactive Peptides for Enhancing Intestine Health
- Elizabeth Rhoades, Spirit Safe Consulting LLC – Fundamentals of Distilled Beverages: Spirits and Their Raw Materials
- Dr. Ruurd Zijlstra, University of Alberta – Use of Fermentation Co-Products in Pet Foods and Animal Feeds

### **CSAS Symposium II: Livestock Resilience and Climate Change**

- Dr. Christine Baes, CGIL, University of Guelph, Canada – Livestock Resiliency: Concepts and Approaches
- Dr. John Basarab, University of Alberta, Canada – Use of Genomic Tools to Improve Production Efficiency, Health Resilience and Carbon Footprint of Beef Production
- Dr. Roland Kröbel, Agriculture and Agri-Food Canada – Estimating the Environmental Impact of Livestock Operations Using the Canadian Whole-Farm Model Holos Developed for Canadian Farmers
- Dr. Frank Mitloehner, University of California, Davis – Rethinking Methane: Livestock's Path to Climate Neutrality
- Dr. Adriana Rivera Huerta, National Autonomous University of Mexico – Impacts on Biodiversity, Environment and Society of Beef Production in the Mexican Tropics: A Life Cycle Assessment Approach



### **Forages and Pastures Symposium I: Design and Analysis of Grazing Experiments**

- Dr. Timothy DelCurto, Montana State University – Designing Research for Beef Cattle Production in Extensive Environments
- Dr. Joao Vendramini and Lynn Sollengerger, University of Florida – Opportunities and Challenges of Conducting Grazing Experiments in Pasturelands
- Dr. Paul A. Beck, Oklahoma State University – Have New Feeding Technologies Revolutionized the Way We Design Grazing Experiments?
- Dr. W. Brandon Smith, Tarleton State University – Statistical Analysis of Grazing Research

### **FRIDAY, JULY 16, 2021 – AFTERNOON**

#### **Cell Biology Symposium: Role of Epigenetics in Production and Health**

- Dr. Maria L. Hoffman, University of Rhode Island – The Effects of Fetal Programming on Offspring Pancreas DNA Methylation
- Dr. Jiuzhou Song, University of Maryland – The Epigenetics and Plasticity of CD4+ T Cells in Poultry Health
- Dr. Cheryl S. Rosenfeld, University of Missouri – Epigenetic Changes Due to Environmental Toxicants: An Animal Health Concern

#### **Companion Animals Symposium III: Dietary Supplements in Companion Animal Nutrition**

(Sponsored by McNamara Research in Agriculture Firm, LLC)

- Mario Martinez Martinez, Aarhus University – Nutritional and Extra-nutritional Compounds in Fruit and Vegetable Waste and their Potential for Use in Dietary Supplements
- Wendy Pearson, University of Guelph – Equine nutraceuticals: is Science Finally Catching Up to Fiction?
- William Bookout, National Animal Supplement Council – Animal Supplements: Market Trends, Benefits and Limitations of Academic Research, and Regulatory Considerations in Product Development
- Dr. Cheryl L. Morris, Iowa State University – Homemade Pet Diets: What are the Key Supplement Considerations?

#### **Horse Species Symposium: Nutrition Beyond the NRC: The Current Reality of Equine Nutrition vs. Our Knowledge of the Requirements**

- Dr. Mary Beth Gordon, Land O'Lakes – Nature Vs. The NRC: Utilizing An Understanding of The “Natural” Diet of the Horse In Contrast to Defined Guidelines
- Dr. Lori K. Warren, University of Florida – Beyond the NRC: The Role of Non-nutritives in Equine Health and Performance
- Dr. Laurie M. Lawrence, University of Kentucky – Historical Perspectives on the Equine NRC





- Dr. Amy S. Biddle, University of Delaware – The Equine Microbiome: How Does Our Understanding of the Microbiome Impact the Nutrient Requirements of the Horse?
- Dr. Brian D. Nielsen, Michigan State University – Panel: Nutrition Research in the 2020's: What Holes are There? What should the Goal of Equine Nutrition Research be in the Next Decade?

**Nonruminant Nutrition Symposium I: Impact of Pandemic and Climate Events on Pig and Poultry Production and Strategies during Economic Uncertainty (Sponsored by Cargill)**

- Dr. Chris Parks, Provimi – Integrated Pork Production During a Global Pandemic: Impact on the Live Production Supply Chain, Feed Mills, & Nutrition
- Dr. Ehsan Khafipour, Daimond V – Swine Microbiomes and Viral Infections: Lesson Learned from Recent Human and Swine Pandemics
- Dr. Chad Pilcher, Cargill – Precise Nutrient Supply to Drives Successful Pork Production during Economic Uncertainty
- Dr. Michael S. Edmonds, Kent Nutrition Group, Inc. – Amino Acid Imbalance with Excess Methionine in Late-finishing Pigs: Effects on Performance and Carcass Quality

**SSASAS Kunkle Symposium: Use of Byproducts in Grazing Beef Diets**

- Dr. Matthew H. Poore, North Carolina State University – Use of Byproduct Feeds in Southeastern Beef Production Systems
- Dr. Lawton Stewart, University of Georgia and Kim Mullinix, Auburn University – Cotton Byproduct Use in Southeastern Beef Cattle Diets: Quality, Intake, and Changes in Feed Characteristics
- D.D. Harmon, North Carolina State University and J.W. Luhmkuhler, University of Kentucky – Rise of Craft Breweries and Distilleries Increase Beef Cattle Supplement Availability

## **SATURDAY, JULY 17, 2021 – MORNING**

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**Animal Breeding and Genetics Symposium II: What Makes Complex Systems Complex?**

- Dr. Piter Bijma, Wageningen University, Netherlands – Integrating Quantitative Genetics and Epidemiology: Why Selection Against Infectious Diseases Is More Promising Than We Think
- Dr. Kathryn Kemper, University of Queensland, Australia – TBD
- Dr. Ian Dunn, Roslyn Institute, University of Edinburgh – The Saga of Just One QTL: From Laying Hen Bone Strength to the One Carbon Cycle
- Dr. Jack C.M. Dekkers, Iowa State University – Genetic Improvement of Disease Resilience in Pigs
- Dr. Ronaldo Cerri – University of British Columbia – TBD



**Contemporary and Emerging Issues Symposium II: Science Communication and a Skeptical Society: From Research to Social Media**

- Nick Fox, Center for Open Science – Open Science: Improving Access and Reducing Bias in Science
- Dr. Manoj M. Lalu, Clinical Epidemiology Program, Ottawa Hospital Research Institute, Ottawa, Canada – Past and Future Changes in Scientific Publishing
- Dr. Meghan Wulster-Radcliffe, ASAS – Science Societies: Their Role in Communicating Science
- Dr. Camille D. Ryan, Bayer Crop Science – Disinformation and Scientific Integrity: The Bad Stuff is Easier to Believe
- Toban Dyck, Communications Director of Manitoba Pulse and Soybean Growers Association – Media: Recognition and Reporting Quality of Scientific Information
- Frank M. Mitloehner, University of California, Davis – Rethinking Methane - Livestock's Path to Climate Neutrality

**Meat Science and Muscle Biology Symposium: Recent Development in Lipidomics and Proteomics**

- Dr. Mahesh Narayanan Nair, Colorado State University – New Approaches in Proteomics of Postmortem Muscles
- Dr. Thu Dinh, Mississippi State University – Fatty Acid Analysis and Composition in Meat by Mass Spectrometry
- Dr. Susan K. Duckett, Clemson University – Nutritional and Genetic Influences on Fatty Acid Composition of Beef and Lamb

**Nonruminant Nutrition Symposium II: Opportunities with Novel Ingredients in Swine and Poultry Nutrition**

- Dr. Elizebeth Koutsos, EnviroFlight – Applications of Insect-derived Ingredients in Animal Diets
- Dr. Xingen Lei, Cornell University – Microalgae as an Alternative Feed Protein: Opportunities and Challenges
- Dr. Tadeke Kiros, Phileo – Yeast Proteins Extracted from *Saccharomyces Cerevisiae* as Alternative Sources of Protein in Swine Nutrition



## **SATURDAY, JULY 17, 2021 – AFTERNOON**

### **Animal Health Symposium: Old Problems, New Solutions for Animal Health Management**

- Dr. Xin Zhao, McGill University – A One Health Perspective on S. Aureus Induced Mastitis
- Dr. Ed Topp, Agriculture and Agri-Food Canada – Antimicrobial Resistance in a One Health Context
- Dr. Nathalie Bissonnette, Agriculture and Agri-Food Canada – Tolerance to Bovine Paratuberculosis as Part of the One Health Solution
- Dr. Jay Johnson, Huvepharma – The Changing Roles of Antibiotics in Animal Health Management
- Dr. Neslihan Akdeniz, University of Illinois – Biosecure Disposal of Livestock and Poultry Mortalities
- Dr. Ade Oladeinde, USDA-ARS – Producing Antibiotic Free Chicken Meat in Developing Countries - What We Learned from Nigeria

### **Forages and Pastures Symposium II: Teaching Forages in the Animal Sciences**

- Dr. Larry Redmon, Texas A&M University – Where Should Forage Courses be Housed?
- Dr. Michael L. Looper, University of Arkansas – Forage Agronomists are Needed in Animal Science Departments
- Dr. Harley D. Naumann, University of Missouri – Techniques in Teaching Forages to Animal Scientists
- Dr. Sandra L. Dillard, Auburn University – Extension Programing in Forage Systems: Opportunities and Challenges

### **Swine Species Symposium: Identifying Knowledge Gaps in Swine Research**

- Dr. Brad Belstra, Fast Genetics – Current Knowledge Gaps in Swine Reproduction
- Dr. Justin W. Holl, PIC – Current Knowledge Gaps in Swine Genetics
- Dr. Keith Haydon, CJ America – Current Knowledge Gaps in Swine Nutrition
- Dr. Ashley DeDecker, Smithfield Hog Production – Current Knowledge Gaps in Swine Production Management