Sunday, June 26, 2022

**ASAS-NANP Symposium: Mathematical Modeling in Animal Nutrition**
Chair: Luis Tedeschi, Texas A&M University
8:30 AM - 5:00 PM
208 A/B

8:30 a.m. 72 Developing Machine Learning Models When Data Is Limiting
Luis O. Tedeschi
Texas A&M University

8:40 a.m. 75 The Power of Theoretical and Practical Identifiability Analysis for Modeling (micro-) Biological Processes
Rafael Muñoz-Tamayo
Université Paris-Saclay, INRAE, AgroParisTech, UMR Modélisation Systémique Appliquée aux Ruminants, 75005, Paris, France

9:20 a.m. 74 Automation, Machine Learning and Computer Vision as Decision Support; Taking What Animal Agricultural Does Well into the Future
Scott McClain
SAS Institute, Inc

10:00 a.m. ASAS-NANP Symposium Break

10:10 a.m. 73 Building Models for Animal Production and Management with System Dynamics
Benjamin L. Turner
Texas A&M University-Kingsville

11:50 a.m. 76 ASAS-NANP Symposium Roundtable Discussions
Aline Remus
Agriculture and Agri-Food Canada

1:00 p.m. 71 Agent-based Modeling: A Historical Perspective and Comparison to Other Modeling Techniques
Karun Kaniyamattam
Texas A&M University

2:40 p.m. ASAS-NANP Symposium Break

2:55 p.m. 77 Hands-on: Making Sense of Big Data, Machine Learning, and Modeling
Jameson R. Brennan, Hector M. Menendez
South Dakota State University, West River Research and Extension, Department of Animal Science
4:35 p.m. 70 ASAS-NANP Symposium Roundtable Discussions
Hector M. Menendez 1
1South Dakota State University

4:55 p.m. ASAS-NANP Symposium Conclusion

Triennial Growth Symposium
Chair: Min Du, Washington State University
1:00 PM - 5:30 PM
209 A/B

1:00 p.m. Triennial Growth Symposium Introduction

1:05 p.m. 208 Single cell RNA Sequencing (scRNA-seq) in Studying the Early Embryonic Muscle Development
Liang Zhao 1, Min Du 2
1Department of Animal Sciences, Washington State University, 2Washington State University

1:45 p.m. 209 A Single-Cell Atlas of Bovine Skeletal Muscle Tissue Reveals Mechanisms Underlying Differences in Quality Between Wagyu and Brahman Beef
Xing Fu 1
1Louisiana State University

2:25 p.m. 213 From Conception to Birth: The Role of Minerals on Beef Cattle Fetal Programming
Wellison Diniz 1, Ana Clara Baião Menezes 2, Kacie L. McCarthy 3, Jean A. Hall 4, Joel S. Caton 2, Carl R. Dahlen 2, Alison K. Ward 2
1Auburn University, 2North Dakota State University, 3University of Nebraska, 4Oregon State University

3:05 p.m. Triennial Growth Symposium Break I

3:20 p.m. 210 Restricted Maternal Nutrition: Impacts on Fetal Development and Metabolism in Sheep
Kristen E. Govoni 1
1Dept. of Animal Science, University of Connecticut

4:00 p.m. 211 Overcoming the Growth Deficits Programmed by Maternofetal Stress
Dustin T. Yates 1
1University of Nebraska-Lincoln

4:40 p.m. 212 Use of Vitamin A on Developmental Studies in Ruminant Animals
Marcio M. Ladeira 1, Jose Maria Oliveira Junior 1
1Universidade Federal de Lavras

5:20 p.m. Triennial Growth Symposium Conclusion
Monday, June 27, 2022

**Poster Session I**
7:00 AM - 8:15 AM
Exhibit Hall A

7:00 a.m.  **PSI-1  An Evaluation of Functionality of Cryopreserved Sperm Cells Treated with Heifer-plus™**
Heather R. Ruemke ¹, Cheyenne L. Runyan ¹, Jolena N. Waddell ¹, David Roper ¹, A. Brant Poe ¹, Brad Daigneault ²
¹Tarleton State University, ²University of Florida

7:00 a.m.  **PSI-2 Analysis of Boar Semen Microbiome and Sperm Quality Parameters**
Brooke E. McAnally ¹, Molly S. Smith ¹, Jeffrey G. Wiegert ¹, Rebecca K. Poole ¹
¹Texas A&M University

7:00 a.m.  **PSI-3 Balance Between Productivity and Environmental Impacts of Grazed and Hay Fields**
Marina Miqulini ¹, Ricardo Ribeiro ², Marilia Chiavegato ²
¹Ohio State University, ²The Ohio State University

7:00 a.m.  **PSI-4 Beef Fat Enriched with Vaccienc Acid and cis9,trans11-conjugated Linoleic Acid Promotes Hepatic Steatosis and Glucose Intolerance in High-fat-fed C57BL/6 Mice**
Yanqing Xu ¹, Fawaz Haj ¹, Shinichiro Koike ¹, Payam Vahmani ¹
¹University of California, Davis

7:00 a.m.  **PSI-5 Comparison of 7&7 Synch and 7-day Co-synch + CIDR Protocols in a Fixed-time AI System on Beef Cows Using Y-sorted Sex-selected Semen**
Kolton W. Aubuchon ¹, John A. Odde ², Ashley R. Hartman ¹, Michael Semler ¹, Kenneth G. Odde ¹, Karol E. Fike ¹
¹Kansas State University, ²Odde Ranch

7:00 a.m.  **PSI-7 Differential Effects of Garlic on the Secretion of Structurally Different Galectins in Sheep Blood**
SreeNavya Inupala ¹, Sowmya Jagana ¹, Priyanka Pande ¹, MD Rasel Uzzaman ¹, Mulumebet Worku ¹
¹NC A&T State University

7:00 a.m.  **PSI-8 Digestible Energy and Metabolizable Energy Prediction Using Chemical Composition of Feces with No Dietary Information**
Jeonghyeon Son ¹, Jongkeon Kim ¹, Beob G. Kim ¹
¹Konkuk University

7:00 a.m.  **PSI-9 Disrupting CXCL12-CXCR4 Chemokine Axis at the Fetal-maternal Interface During Implantation Results in Altered Expression of Angiogenic and Insulin-like Growth Factors in Ovine Placenta Midgestation**
Megan E. Wasson ¹, Kaitlyn M. Mason ¹, Ryan L. Ashley ¹
¹New Mexico State University
7:00 a.m. PSI-10 Effect of Chronic Melatonin Supplementation During Mid to Late Gestation on Performance and Behavioral Responses of Cows Exposed to Summer Heat Stress
Felix U. Samuel 1, Friday Zakari 2, Nathaniel Ogunkunle 1, Bobwealth O. Omontese 1
1Alabama A&M University, 2University of Jos

7:00 a.m. PSI-20 Effect of Different Forage Allowances During the Middle and Final Thirds of Pregnancy in Nellore Dams Pregnant with Female Calves on Offspring Performance and Milk Yield
Luciana Melo Sousa 1, Ivanna M. Oliveira 2, William L. L. Souza 3, Karla A. Oliveira 4, Lorran A. A. Cidrini 5, Igor Machado Ferreira 6, Laura Franco Prados 7, Flávio Dutra de Resende 7, Gustavo Rezende Siqueira 7
1UNESP / APTA, 2FAZU, 3São Paulo State University, Jaboticabal, Brazil, 4Unesp - FCAV, Jaboticabal, SP, Brazil, 5Montana State University, 6UNESP/APTA, 7APTA

7:00 a.m. PSI-11 Effect of Garlic Barrier on Fecal Egg Count and Protein Secretion in Goats
Sowmya Jagana 1, SreeNavya Inupala 1, Priyanka Pande 1, MD Rasel Uzzaman 1
1NC A&T State University

7:00 a.m. PSI-18 Effect of Heat Processing Methods on Carbohydrate Subfractions and Degradation in Relation to Carbohydrate Molecular Spectral Profile of Barley Grain Using Advanced Molecular Spectroscopy in Ruminants
Peiqiang Yu 1, Luciana Prates 2, P. Yu 3
1Department of Animal and Poultry Science, University of Saskatchewan, 2University of Saskatchewan, 3ASAS, CSAS, ADSA

7:00 a.m. PSI-19 Effect of Increasing Supplementation of Bacillus Spp. on in vitro Ruminal Fermentation and Nutrient Digestibility
Araceli B. Maderal 1, Ignacio Fernandez Marenchino 1, Wilmer Cuervo 1, Federico Tarnonsky 1, Federico Podversich 1, Juan Vargas 1, Martin Ruiz Moreno 1, Tessa M. Schulmeister 1, Oscar Queiroz 2, Bruno L. Cappellozza 2, Nicolas DiLorenzo 3
1University of Florida, 2Chr. Hansen A/S, 3Department of Animal Sciences, North Florida Research and Education Center (NFREC), University of Florida, Marianna, FL

7:00 a.m. PSI-13 Effect of Targeted Metaphylaxis Using Blood Leukocyte Status on Health, Performance, and Economic Outcomes of Auction-derived Feedlot Heifers
Chris Johnson 1, Norah Bate 2, Shaun Sweiger 2, John T. Richeson 1
1West Texas A&M University, 2Advanced Animal Diagnostics

7:00 a.m. PSI-17 Effects of a Supplemental Water Source and Trace-mineral Based Electrolyte Drinking Solution on Intake and Blood Cell Count of Newly Received Feedlot Calves
Mackenzie M. Smithyman 1, Vinicius N. Gouvea 2, Dayna L. Campbell 1, Glenn C. Duff 1, Clint A. Loest 1, Mark E. Branine 3
1New Mexico State University, 2Texas A&M AgriLife Research, 3Zinpro Corporation

7:00 a.m. PSI-14 Effects of Estrus Expression on the Microbial Community Composition of the Uterus in Beef Cows on Day 15 of the Estrous Cycle
Madison B. B. Walker 1, Matthew P. Holton 1, Jefferson M. Lourenco 1, Pedro L.P Fontes 1
1University of Georgia
7:00 a.m. PSI-15 **Effects of Melatonin on Behavioral and Physiological Responses of Weaned Beef Calves**
Nathaniel Ogunkunle ¹, Friday Zakari ², Felix U. Samuel ¹, Bobwealth O. Omontese ¹
¹Alabama A&M University, ²University of Jos

7:00 a.m. PSI-16 **Effects of Melatonin on Physiological Parameters, Chute and Exit Scores in Beef Calves Exposed to Summer Heat Stress**
Friday Zakari ¹, Felix U. Samuel ², Nathaniel Ogunkunle ², Bobwealth O. Omontese ²
¹University of Jos, ²Alabama A&M University

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**Ruminant Nutrition I: Growth and Efficiency**
Chair: Jhones Sarturi, Texas Tech University
8:00 AM - 10:05 AM
301 A/B

8:00 a.m. **Ruminant Nutrition I: Growth and Efficiency Introduction**

8:05 a.m. 326 **Nutritional Grouping and Machine-learning Techniques: Towards a Feed Efficiency Improvement in Beef Cattle Production**
Pablo Guarnido Lopez ¹, Antonio de Vega ², Mohammed Ben Aouda ³, Luis O. Tedeschi ⁴
¹INRA, ²Universidad de Zaragoza-CITA, ³Institut AgroDijon, University Bourgogne, University Bourgogne Franche-Comté, F-21000, Dijon, France, ⁴Texas A&M University

8:20 a.m. 327 **Parameter Updates in the Davis Growth Model for Growth, Intake, and Composition of Modern Angus-cross Cattle**
Meredith Harrison ¹, James W. Oltjen ²
¹UC Davis, ²University of California, Davis

8:35 a.m. 324 **Factors Affecting Growth, Efficiency, and Carcass Quality of Finishing Dairy X Beef Hybrids**
Addie Wommack ¹, Colton A. Robison ¹, Garrett Farran ¹, Blake K. Wilson ¹, Olivia N. Genther Schroeder ², Troy Wistuba ², Paul A. Beck ¹
¹Oklahoma State University, ²Purina Animal Nutrition

8:50 a.m. 322 **The Influence of Previous Plane of Nutrition on Grain or Grass-fed Finished Steers: Water-related Gene Expression in the Kidney**
Aghata Silva ¹, Arturo Macias Franco ², Felipe Henrique De Moura ³, Bradley S. Ferguson ²,
Mozart A. Fonseca ³
¹Auburn University, ²University of Nevada Reno, ³University of Nevada, Reno

9:05 a.m. 321 **Evaluation of Heifer Forage Efficiency Through RFI and Greenhouse Gas Emissions**
Emma A. Briggs ¹, Kade Horton ¹, Mikayla F. Moore ¹, David Lalman ¹
¹Oklahoma State University

9:20 a.m. 320 **Effect of Breed of Sire and Calving Season on Feedlot Performance and Carcass Characteristics**
Mikayla F. Moore ¹, Emma A. Briggs ¹, Blake K. Wilson ¹, Ryan R. Reuter ¹, Paul A. Beck ¹,
Andrew P. Foote ¹, David Lalman ¹
¹Oklahoma State University
9:35 a.m. 325  **Candidate Plasma Biomarkers Associated with Residual Feed Intake in Beef Steers**
Godstime A. Taiwo 1, Modoluwamu Idowu 1, Shelby Collins 1, Taylor S. Sidney 1, Matthew E. Wilson 1, Andres A. Pech-Cervantes 2, Ibukun M. Ogunade 1
1West Virginia University, 2Fort Valley State University

9:50 a.m. 323  **CANCELLED: Effects of Slaughter Weight and Sex on Multivariate Fat Allometric Coefficients for Determination of Optimal Slaughter Points on Crossbred Angus X Nellore Steers and Bulls**
Arturo Macias Franco 1, Aghata Silva 2, Mozart A. Fonseca 3, Sebastiã­o de Campos Valadares Filho 4
1University of Nevada Reno, 2Auburn University, 3University of Nevada, Reno, 4Universidade Federal de Viçosa

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**Ruminant Nutrition II: Health**
Chair: Robin Anderson, USDA/ARS, Southern Plains Agricultural Research Center’s Food & Feed Safety Research Unit
8:00 AM - 10:15 AM
301 C/D

8:00 a.m.  **Ruminant Nutrition II: Health Introduction**

8:05 a.m. 352  **Awardee Talk: Opportunities for Antioxidants and Plant-derived Polyphenols to Improve Ruminant Health and Productivity**
Frank R. Dunshea 1
1The University of Melbourne

8:35 a.m. 330  **Developing a Leaky Gut Model in Growing Holstein Heifers Using Feed Restriction Followed by Alimentation to a High Concentrate Diet**
Jeffrey N. Carter 1, Sara K. Linneen 2, Nielson Baxter 1, Jacob Shields 1, Nathan Augspurger 1, Lance H. Baumgard 3
1MBRD Service Company, LLC, 2Elanco Animal Health, 3Iowa State University

8:50 a.m. 333  **Development of a 4-plex Quantitative PCR Assay for the Detection and Quantification of Species and Subspecies of Fusobacterium Necrophorum and Fusobacterium Varium in Bovine Rumen Fluid**
Alyssa K. Deters 1, T.G. Nagaraja 2, Jianfa Bai 1, Xiaorong Shi 1, Qing Kang 1
1Kansas State University, 2Kansas State University College of Veterinary Medicine

9:05 a.m. 331  **Effects of On-arrival Application of a Modified-live Respiratory and Clostridia Vaccination on Health, Growth Performance, and Antibody Titers of Newly-weaned Calves**
Erin R. Gubbels 1, Forest L. Francis 1, Warren C. Rusche 1, Zachary K. Smith 1
1South Dakota State University

9:20 a.m.  **Ruminant Nutrition II: Break**
9:30 a.m. 329 Effectiveness of Virginiamycin Administration on Animal Health and the Observed Impacts on Growth, Development, and Intake Dynamics in Growing and Finishing Calves
Luiz Fernando Dias Batista 1, Madeline E. Rivera 1, Luis O. Tedeschi 1
1Texas A&M University

9:45 a.m. 328 Effects of Supplemental Zinc Concentration and Source on Performance and Biomarkers of Immune Status in Receiving Steers
Dathan T. Smerchek 1, Jodi McGill 1, Stephanie L. Hansen 1
1Iowa State University

10:00 a.m. 332 Evaluating the Effects of Lactic Acid Adaptation in Beef Cattle Prior to an Acidosis Challenge
Zachary Buessing 1, Bree Gaffney 2, Jenna McNelis 3, Haley F. Linder 1, Sara M. Tondini 4, Joshua C. McCann 1
1University of Illinois at Urbana-Champaign, 2Western Illinois University, 3Illinois State University, 4University of Illinois

Beef Species and Ruminant Nutrition Symposium I:
Historical and Current Estimates of Bovine Composition and Energetics
Sponsored by Cactus Feeders, Inc.
Chair: Sara Trojan, Peak Beef Cattle Nutrition and Management Consulting LLC
8:00 AM - 12:00 PM
Ballroom B

8:00 a.m. Beef Species and Ruminant Nutrition Symposium I Introduction

8:05 a.m. 91 Key Economic and Marketing Trends in Fed Cattle and High-quality Beef
Katelyn McCullock 1, James Robb 1
1Livestock Marketing Information Center

8:45 a.m. 89 Meat Science Perspective, Carcass Composition, and Grid Marketing: Have We Made Any Advances?
Ty E. Lawrence 1
1West Texas A&M University

9:25 a.m. 92 Management, Technology, and Growth Composition: Have They Affected Carcass End Goals?
Zachary K. Smith 1, Warren C. Rusche 1
1South Dakota State University

10:05 a.m. Beef Species and Ruminant Nutrition Symposium I Break

10:20 a.m. 90 Evaluating the Difference Between Formulated Dietary Net Energy Values and Net Energy Values Determined from Growth Performance and Estimates of Shrunk Body Weight Gain in Finishing Beef Cattle
Kristin E. Hales 1, Michael Galyean 2, Zachary K. Smith 3
1Texas Tech University, 2Texas Tech University Department of Veterinary Medicine, 3South Dakota State University
11:00 a.m.  88  How Can Industry Use Energy and Body Composition Predictions to Achieve Production Expectations?
Ben P. Holland  
1Cactus Feeders

11:40 a.m.  Beef Species and Ruminant Nutrition Symposium I Q&A

Poster Session II-A
8:30 AM - 9:45 AM
Exhibit Hall A

8:30 a.m.  PSII-A-1  A Preliminary Study Examining Supplement and Medication Use in Rodeo Horses
Jake A. Jenson 1, Carolyn J. Hammer 2, Jennifer M. Young 2
1North Dakota State University, 2Department of Animal Sciences, North Dakota State University

8:30 a.m.  PSII-A-2  Correlations Between Reactive Oxygen Species and Functional Measurements of Spermatozoa from Beef Bulls
Ian E. Batey 1, Ashley R. Hartman 1, Theresa J. Rathbun 1, Abby L. Zezeski 2, Tom W. Geary 2, David M. Grieger 1, Karol E. Fike 1
1Kansas State University, 2USDA-ARS

8:30 a.m.  PSII-A-3  Effect of Beef Breed Type Relative to Feedlot Performance, Feeding Behavior, and Carcass Characteristics
Lillian L. Okamoto 1, Caleb C. Reichhardt 1, Anthony F. Alberto 1, Laura A. Motsinger 2, Sarah A. Bayles 1, Bryce W. Roholt 1, Matthew D. Garcia 1, Kara J. Thornton 1
1Utah State University, 2Hill's Pet Nutrition

8:30 a.m.  PSII-A-4  Effects of Beef Cattle Breed Type and Steroid Hormones on Proliferation Rates of Bovine Satellite Cells
Bailee Brown 1, Laura A. Motsinger 2, Caleb C. Reichhardt 1, Gordon K. Murdoch 3, Brenda M. Murdoch 4, Matthew D. Garcia 1, Kara J. Thornton 1
1Utah State University, 2Hill's Pet Nutrition, 3Washington State University, 4University of Idaho

8:30 a.m.  PSII-A-5  Effects of Time Postpartum and Late Gestational Nutrient Restriction on Beef Heifer Colostrum
Kirby J. Latimer 1, Abigail R. Rathert-Williams 2, Colby A. Redifer 2, Alejandro Rodriguez Zamora 1, Thomas B. McFadden 3, Allison M. Meyer 2
1Division of Animal Sciences, University of Missouri, 2University of Missouri, 3Division of Animal Science, University of Missouri

8:30 a.m.  PSII-A-6  Evaluation of Maternal Plane of Nutrition and Selenium Supplementation on the Neonatal Fragment Crystallizable Receptor (FcRn) in Ewe Mammary Tissue
Rachel A. Voigt 1, Carolyn J. Hammer 2, Maverick C. Guenther 1, Pawel P. Borowicz 1, Tammi L. Neville 3, Tara J. Swanson 1, Kimberly A. Vonnahme 4, Dale A. Redmer 1, Larry P. Reynolds 1, Joel S. Caton 1
1North Dakota State University, 2Department of Animal Sciences, North Dakota State University, 3USDA- NIFA, 4Zoetis
8:30 a.m. PSII-A-7  Evaluation of Technician Skill Level Effect on Ultrasonic Estimates of Body Composition in Feedlot Heifers
Nerissa Bechtol Wuest 1, Noah P. Jesko 1, Tommy L. Perkins 1
1West Texas A&M University

8:30 a.m. PSII-A-8  Examining the Effects of Providing Injectable Mineral, Oral Mineral or Both to High-risk Calves Relative to Weight Gain, Ribeye Area and Backfat Thickness
Zachary C. Crump 1, Anthony F. Alberto 1, Bailee Brown 1, Laura A. Motsinger 2, Caleb C. Reichhardt 1, Bryce W. Roholt 1, Kerry Rood 1, Matthew D. Garcia 1, Brett Bowman 1, Kara J. Thornton 1
1Utah State University, 2Hill's Pet Nutrition

8:30 a.m. PSII-A-10  Impact of Altered Photoperiod on Colostral Iga and Lactoferrin in Dairy Cattle
Andrea Connor 1, Kayla J. Alward 1, Alison Duncan 1, Rebecca Cockrum 1
1Virginia Tech

8:30 a.m. PSII-A-11  Suppressing the CXCL12-CXCR4 Chemokine Axis at the Fetal-maternal Interface During Implantation Results in Altered Expression of Inflammatory Cytokines in Ovine Placenta at Midgestation
Jillian M. Hughes 1, Cael N. Alderete 1, Ryan L. Ashley 1
1New Mexico State University

Growth and Development
Chair: Steven Zinn, Dept. of Animal Science, University of Connecticut
8:30 AM - 10:20 AM
209 A/B

8:30 a.m. Growth and Development Introduction

8:35 a.m. 204  Awardee Talk: Poor Maternal Nutrition Impacts Metabolic Factors and Glucose Tolerance in Sheep Offspring
Nicole M. Tillquist 1, Amanda S. Reiter 1, Mia Y. Kawaida 1, Brandon I. Smith 1, Sarah A. Reed 2, Steven A. Zinn 2, Kristen E. Govoni 2
1University of Connecticut, 2Dept. of Animal Science, University of Connecticut

9:05 a.m. 206  Efficacy of Using Ammonium Chloride Supplements During Crisis Management to Stop Growth in Various Ages of Pigs
Kadence M. Walsh 1, Brittney P. Kokinos 1, Mariola Grez Capdeville 1, Laura A. Amundson 1, Andrew W. Stevens 2, Jean-Paul Chavas 2, Thomas D. Crenshaw 1
1Department of Animal and Dairy Sciences, University of Wisconsin-Madison, 2Department of Agricultural and Applied Economics, University of Wisconsin-Madison

9:20 a.m. 203  Estradiol Improves Proliferation and Protein Synthesis Rates of Primary Bovine Satellite Cells by Altering mRNA Abundance Related to Amino Acid and Micronutrient Metabolism
Caleb C. Reichhardt 1, Lillian L. Okamoto 2, Laura A. Motsinger 2, Nikole E. Ineck 2, Kara J. Thornton 2
1University of Hawai'i at Mānoa, 2Utah State University
9:35 a.m. 205 Exposure to Heat Stress Stimulates Cell Proliferation and Heat Shock Protein Expression in Bovine Primary Satellite Cells
WonSeob Kim 1, Erika P. Eckhardt 1, Jongkyoo Kim 1
1Michigan State University

9:50 a.m. 207 Awardee Talk: The Impact of Disease on Nutrient and Energy Intake and Utilization to Support Lean Tissue Accretion in Growing Pigs
Nicholas K. Gabler 1
1Iowa State University

Physiology and Endocrinology Symposium:
The Paternal Contribution to Development Programming
Chair: Joel Caton, North Dakota State University
8:30 AM - 11:00 AM
205 A/B

8:30 a.m. Physiology and Endocrinology Symposium Introduction

8:35 a.m. 303 Overview of Paternal Programming in Livestock Species
Carl R. Dahlen 1, Joel S. Caton 1, Wellison Diniz 2, Lawrence P. Reynolds 1, Alison K. Ward 1
1North Dakota State University, 2Auburn University

9:20 a.m. 304 The Paternal Programming of Periconception Development
Hannah L. Morgan 1, Adam Watkins 1
1University of Nottingham

10:05 a.m. Physiology and Endocrinology Symposium Break

10:15 a.m. 302 Implications of the Paternal Environment for Future Generations
Janice L. Bailey 1
1Fonds de recherche du Québec - Nature et technologies

Physiology and Endocrinology I: Metabolism, Endocrine, and/or Stress Interactions
Chair: Amy Biddle, University of Delaware
8:30 AM - 11:15 AM
207 A/B

8:30 a.m. Physiology and Endocrinology I: Metabolism, Endocrine, and/or Stress Interactions Introduction

8:35 a.m. 278 Awardee Talk: Progesterone Regulates the Abundance of mRNAs and Proteins Involved in Polyamine Metabolism in the Sheep Endometrium
Katherine M. Halloran 1, Emily Hoskins 1, Claire Stenhouse 1, Robyn Moses 1, Michael C. Satterfield 1, Kathrin Dunlap 1, Heewon Seo 1, Greg Johnson 1, Guoyao Wu 1, Fuller W. Bazer 1
1Texas A&M University
9:05 a.m.  282  **Metabolic and Endocrine Changes in Dairy Cows Fed Different Diets at Dry-off**
Pascaline Jermann<br72x1700}, Dominik Fritsche<br72x1700}, Lea Wagner<br72x1700}, Olga Wellnitz<br72x1700}, Rupert M. Bruckmaier<br72x1700}, Josef J. Gross<br72x1700}
1Veterinary Physiology, Vetsuisse Faculty, University of Bern

9:20 a.m.  283  **Quercetin Antagonizes Tall Fescue Toxicosis-induced Cardiovascular Toxicity in Lamb (Ovis Aries) via Modulating PGC-1α Mediated Mitochondrial Biogenesis**
Yan Huang<br72x1700}, Jing Ge<br72x1700}, yongjie Wang<br72x1700}, Sarah Shelby<br72x1700}, Palika Dias-Morse<br72x1700}, Ken P. Coffey<br72x1700}
1University of Arkansas, 2Northeast Agricultural University, 3University of Arkansas Fayetteville

9:35 a.m.  284  **Gut and Skeletal Muscle Control the Effect of Low Protein Diets on Feed Intake and Thermal Radiation of Broilers During Experimentally Induced Heat Stress**
Julia Sutton<br72x1700}, Mohammad Habibi<br72x1700}, Cedrick n. Shili<br72x1700}, Ali Beker<br72x1700}, Jacob Burch-Konda<br72x1700}, Janeen L. Salak-Johnson<br72x1700}, Andrew P. Foote<br72x1700}, Adel Pezeshki<br72x1700}
1Department of Animal and Food Sciences, Oklahoma State University, Stillwater, OK 74078, 2Oklahoma State University

9:50 a.m.  285  **Effect of Low Protein Diets on Oxidative Stress, Plasma Metabolomics and Cecal Microbiome of Broiler Chickens During Experimentally Induced Heat Stress**
Julia Sutton<br72x1700}, Mohammad Habibi<br72x1700}, Cedrick n. Shili<br72x1700}, Adel Pezeshki<br72x1700}
1Department of Animal and Food Sciences, Oklahoma State University, Stillwater, OK 74078

10:05 a.m.  **Physiology and Endocrinology I: Metabolism, Endocrine, and/or Stress Interactions Break**

10:15 a.m.  280  **The Effect of Bromocriptine Mesylate and Heat Stress on Innate and Adaptive Immune Function in Beef Cattle**
Joshua M. Zeltwanger<br72x1700}, Eric Bailey<br72x1700}, Don Spiers<br72x1700}, Emily A. Petzel<br72x1700}, Benjamin Nelson<br72x1700}, Derek W. Brake<br72x1700}
1University of Missouri, 2Animal

10:30 a.m.  279  **Identification of Potential Biomarkers of Reproductive Development in Vaginal Gene Expression Associated with Serum Concentrations of Reproductive Hormones at Key Periods in Gilt Development**
Shannon L. Dierking<br72x1700}, Jodi Morton<br72x1700}, Juan Carlos Pinilla<br72x1700}, Michael Gonda<br72x1700}, Hossein Rekabdarkolae<br72x1700}, Jeffrey A. Clapper<br72x1700}, Crystal L. Levesque<br72x1700}
1South Dakota State University, 2Southern University & A&M College, 3PIC North America

10:45 a.m.  281  **The Relationship Between Postnatal Hormone Concentrations and the Development of Boar Taint at Puberty**
Christine Bone<br72x1700}, E. James Squires<br72x1700}
1University of Guelph
11:00 a.m. 277 Live Animal Mitochondrial Markers During the Feedlot Phase Are Related to Meat Quality in Angus but Not Brahman Steers
Pier L. Semanchik 1, Lauren T. Wesolowski 2, Jessica L. Simons 1, Chloey Guy 3, Audrey L. Earnhardt-San 1, George A. Perry 4, Charles R. Long 5, Dustin Law 6, Don A. Neuendorff 6, Ronald D. Randles 4, Tanner J. Machado 7, Thomas H. Welsh 1, Sarah H. White-Springer 8
1Texas A&M University and AgriLife Research, Department of Animal Science, 2Department of Animal Science, Texas A&M University and Texas A&M AgriLife Research, 3Texas A&M AgriLife Research Center, Overton, 4Texas A&M AgriLife Research, Overton, TX, 5School of Veterinary Medicine and Biomedical Sciences, Texas A&M University, 6Texas A&M AgriLife Research Overton, 7Texas A&M University-Kingsville, Department of Animal Science and Veterinary Technology, 8Department of Animal Science, Texas A&M University; Texas A&M AgriLife Research

Meat Science and Muscle Biology
Chair: Mahesh Nair, Colorado State University
8:30 AM - 11:45 AM
302A

8:30 a.m. Meat Science and Muscle Biology Introduction

8:35 a.m. 224 Awardee Talk: Investigating Muscle Fiber Hypertrophy during Pre- and Post-natal Growth
Susan K. Duckett 1, Maslyn A. Greene 1
1Clemson University

9:05 a.m. 232 Examination of miRNA Mimics and Inhibitors on Satellite Cell Proliferation in vitro
Maslyn A. Greene 1, Susan K. Duckett 1
1Clemson University

9:20 a.m. 234 MicroRNA-199a-3p Does Not Alter Stearyol-CoA Desaturase Expression In vitro
Aliute-Nkoyo S. Udoka 1, Susan K. Duckett 1
1Clemson University

9:35 a.m. 233 Comparison of Intramuscular Fat Deposition in Different Muscles of Beef Cattle
Noah P. Jesko 1, John T. Richeson 1, Ty E. Lawrence 1, Tommy L. Perkins 1
1West Texas A&M University

9:50 a.m. 227 frizzled7 Mediates Lysine-activated β-catenin to Promote Satellite Cells in Manipulating Skeletal Muscle Growth
Chenglong Jin 1, Mao Ye 2, Zhi-wen Song 2, Chun-qi Gao 2, Hui-chao Yan 2, Xiu-qi Wang 3
1#1, No.1 Dafeng Street, Tianhe District, Guangzhou City, Guangdong Province, China, 2College of Animal Science, South China Agricultural University, 3College of Animal Science, South China Agricultural University

10:05 a.m. Meat Science and Muscle Biology Break
10:15 a.m.  228  Metabolite Differences Between the Oxygen-exposed and Non-oxygen Exposed Surfaces of the Longissimus Lumborum Muscle
Morgan Denzer 1, Morgan Pfeiffer 1, Gretchen G. Mafi 1, Ranjith Ramanathan 1
1Oklahoma State University

10:30 a.m.  229  Effects of High-pressure Processing on Cooked Color and Sensory Attributes of Dark-cutting Beef
Cole Reesman 1, Morgan Denzer 1, Gary Sullivan 2, Mary-Grace Danao 2, Morgan Pfeiffer 1, Gretchen G. Mafi 1, Ranjith Ramanathan 1
1Oklahoma State University, 2University of Nebraska-Lincoln

10:45 a.m.  230  Association of Lung Health with Carcass Performance
Becca B. Grimes 1, Travis C. Tennant 1, Ty E. Lawrence 1
1West Texas A&M University

11:00 a.m.  231  Electrical Conductivity, Color, and Tenderness Values of Fresh and/or Cooked Beef
Carolina Mesquita 1, Carl Richardson 1, Christopher Kerth 2, Pratheesh Sudhakaran 1, Ana Villanueva 1
1Texas State University, 2Texas A&M University

11:15 a.m.  225  Effects of Supplementing a Live Yeast Supplement in Pre-weaning and Finishing Diets of Holstein Bull Calves on Meat Production and Quality
Sarah J. Davies 1, Giulia Esposito 2, Cletos Mapiye 1, Clothilde Villot 3, Eric Chevaux 3, Emiliano Raffrenato 1
1Stellenbosch University, 2Department of Veterinary Medicine, University of Parma, Param, Italy, 3Lallemand SAS

11:30 a.m.  226  Proteomic and Metabolomic Profiles Are Associated with Fresh Pork Loin Quality Phenotypes
Logan Johnson 1, Chaoyu Zhai 2, Elisabeth Huff Lonergan 1, Ken Prusa 1, Jessica Prenni 3, Jacqueline Chaparro 3, Steadham Edward 1, Mahesh Nair 3, Steven M. Lonergan 1
1Iowa State University, 2University of Connecticut, 3Colorado State University

Poster Session II-B
8:45 AM - 9:45 AM
Exhibit Hall A

8:45 a.m.  PSII-B-18  açai Seed as Fiber Source on Intake, Digestibility and Ruminal Parameters in Zebu Beef Cattle Fed a High Concentrate Diet
Rafael Mezzomo 1, Natalia G. Lacerda 2, Terry E. Engle 3, Kaliandra Souza S. Alves 4, Luis Rennan S. Oliveira 2, Julian André C. Vargas 2, Leticia S. Sousa 2, Kalita Gabrielly S. Coelho 2, Shara Amélia S. Bisbo 2, Silvana S. Lima 2, Mariana Mirtes L. Gama 2, Daiany I. Gomes 5
1Colorado State University, 2Federal Rural University of Amazon, 3Colorado State University, 4University of Florida, 5Universidade Federal Rural da Amazônia-UFRA
8:45 a.m. PSII-B-19  Adaptation Periods Protocol for Nellore Cattle in Intensive Pasture Finishing
Daniel I. C. G. Gouvêa 1, Maria B. Niehues 2, Alexandre Perdigão 3, Victor Valério de Carvalho 4, Tiago S. S. Acendo 5, Guilherme S. F. M. Vasconcellos 6, Gustavo V. Polycarpo 7, Cyntia L. L. Martins 1, Málio B. D. B. Arrigoni 1
1São Paulo State University (Unesp), FMVZ Botucatu, SP, Brazil, 2São Paulo State University, Botucatu, Brazil, 3DSM Nutritional Products Brazil, 4dsm-firmenich, 5DSM Nutritional Products, 6DSM Nutritional Products A.S, SP, Brazil, 7São Paulo State University (Unesp), FCAT Dracena, SP, Brazil

8:45 a.m. PSII-B-20  Altering the Particle Size of Supplemental Zeolite (clinoptilolite) in Finishing Cattle Diets: Manure Characteristics and Ammonia Emissions
Cheyanne A. Myers 1, Mario de Haro Marti 1, Mireille Chahine 1, Gwinyai E. Chibisa 1
1University of Idaho

8:45 a.m. PSII-B-12  Association of Glucose Metabolism with Feed Intake, Growth, and Efficiency of Beef Steers
Andrew P. Foote 1, Carlee M. Salisbury 1, Matthew R. Beck 2, Dagan Montgomery 1, Abigail R. Rother-Williams 3, Mindy E. King 1
1Oklahoma State University, 2USDA-ARS, 3University of Missouri

8:45 a.m. PSII-B-13  Bacterial Composition of the Rumen Microbiome with a Bacillus Probiotic Added to the Diet of Feedlot Cattle
Dina A. Linde 1, Lindeque du Toit 1, Dirkjan Schokker 2, Este van Marle-Koster 1
1University of Pretoria, 2Wageningen Livestock Research, Wageningen University and Research

8:45 a.m. PSII-B-14  Combination of Essential Oils, α-amylase and 25-hydroxy-vitamin-d3 Increases Performance by Feedlot Cattle on Adaptation Period
Maria B. Niehues 1, Alexandre Perdigão 2, Hugo L. Lenon Correa 2, Victor Valério de Carvalho 4, Guilherme S. F. M. Vasconcellos 5, Tiago S. S. Acedo 6, Cyntia L. L. Martins 3, Málio B. D. B. Arrigoni 3
1São Paulo State University, Botucatu, Brazil, 2DSM Nutritional Products Brazil, 3São Paulo State University (Unesp), FMVZ Botucatu, SP, Brazil, 4dsm-firmenich, 5DSM Nutritional Products A.S, SP, Brazil, 6DSM Nutritional Products

8:45 a.m. PSII-B-15  Composition of Milk as Explained by Rumen Fermentation Parameters, Diet Composition and Combination
Sathya Sujani 1, Robin R. White 2
1Department of Animal & Poultry Sciences, Virginia Tech, 2Virginia Tech School of Animal Sciences

8:45 a.m. PSII-B-21  Does Prior Viral Infection Exacerbate the Response to Heat Stress?
Edith J. Mayorga-Lozano 1, Sonia Rodriguez-Jimenez 1, Lance H. Baumgard 1
1Iowa State University
8:45 a.m. PSII-B-16  **Effect of Calcium Gluconate Embedded in a Hydrogenated Fat Matrix on Performance and Carcass Characteristics of Finishing Beef Heifers**
Daniel M. Watanabe 1, John Doelman 2, Dave J. Seymour 2, M V. Sanz-Fernandez 2, Oscar Lopez-Campos 3, Nuria Prieto 4, Greg B. Penner 1
1Department of Animal and Poultry Science, University of Saskatchewan, 2Trouw Nutrition R&D, 3Agriculture and Agri Food Canada, Science and Technology Branch, 4Agriculture and Agri-Food Canada

8:45 a.m. PSII-B-17  **Effect of Corn Grain Processing and Moisture Content in Finishing Diets Formulated to Meet Rumen Degradable Protein Requirements on Feedlot Cattle Performance**
Lucas González 1, Sergio Viano 2, Patricio Davies 3, Daniel G. Méndez 2, Gustavo Jaurena 4, José Arroquy 5, Juan C. Elizalde 6, Irene Ceconi 2
1Instituto Nacional de Tecnología Agropecuaria, Estación Experimental Agropecuaria de General Villegas, Buenos Aires, Argentina; Consejo Nacional de Investigaciones Científicas y Técnicas, Ciudad Autónoma de Buenos Aires, Argentina; Universidad de Buenos Aires, Facultad de Agronomía, Ciudad Autónoma de Buenos Aires, Argentina, 2Instituto Nacional de Tecnología Agropecuaria, Estación Experimental Agropecuaria de General Villegas, Buenos Aires, Argentina, 3Instituto Nacional de Tecnología Agropecuaria, 4Universidad de Buenos Aires, Facultad de Agronomía, Ciudad Autónoma de Buenos Aires, Argentina, 5Instituto Nacional de Tecnología Agropecuaria; Universidad Nacional del Sur, 6Elizalde & Riffel private consultants, Rosario, Santa Fe, Argentina

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**Small Ruminant Symposium: Current Status of Genomics Research in Sheep**
Chair: Raluca G. Mateescu, University of Florida; Christian Posbergh, Montana State University
9:00 AM - 11:00 AM
206 A/B

9:00 a.m.  **Small Ruminant Symposium Introduction**

9:05 a.m.  **377 Derivation and Use of Genomic Enhanced Estimated Breeding Values for Selection in Sheep**
Ronald M. Lewis 1, Daniel J. Brown 2
1Department of Animal Science, University of Nebraska-Lincoln, 2Animal Genetics and Breeding Unit (A Joint Venture of the NSW Department of Primary Industries and University of New England), University of New England

9:25 a.m.  **378 Characterizing Functional Genetic Regulatory Elements in Sheep Reference Genome**
Brenda M. Murdoch 1, Kimberly M. Davenport 1, Shangqian Xie 1, Mazdak Salavati 2, Emily Clark 2, Alan Archibald 3, Stephen N. White 4, Michelle R. Mousel 5, Kim Worley 6, Suraj Bhattarai 7, Stephanie D. McKay 8, Alex Caulton 9, Shannon Clarke 9, Rudiger Brauning 9, Tracy Hadfield 10, Benjamin D. Rosen 11, Timothy Smith 11, Noelle Cockett 10
1University of Idaho, 2The University of Edinburgh, 3University of Edinburgh, 4Washington State University, 5USDA Agricultural Research Service, Washington State University, 6Baylor College of Medicine, 7University of Vermont, 8Department of Animal and Veterinary Sciences, University of Vermont, United States of America., 9University of Otago, New Zealand, 10Utah State University, 11USDA
9:45 a.m. 379 Characterization of Genomic Diversity in Sheep Populations Based On Complementary Metrics and Its Implications for Genomic Selection
Luiz F. Brito 1
1Purdue University

10:05 a.m. 376 Genetic Approaches to Improve Reproductive Performance in the U.S. Sheep Industry
Tom W. Murphy 1
1USDA ARS U.S. Meat Animal Research Center

10:25 a.m. 375 Genomic Approaches for Feed Efficiency in Sheep
Christian Posbergh 1, Daniel Schaub 1
1Montana State University

10:45 a.m. Small Ruminant Symposium Discussion

Contemporary and Emerging Issues Symposium:
Public Policy: Infrastructure Needs for Advancing Research in Animal Agriculture
Chair: Penny Riggs, Department of Animal Science, Texas A&M University, and Texas A&M AgriLife Research
9:00 AM - 12:00 PM
208 A/B

9:00 a.m. Contemporary and Emerging Issues Symposium: Public Policy Introduction

9:05 a.m. 399 Contemporary and Emerging Issues Symposium: Public Policy Keynote
Douglas Steele 1
1Food, Agriculture, & Natural Resources (FANR)

9:50 a.m. Contemporary and Emerging Issues Symposium: Public Policy Instructions

10:00 a.m. Contemporary and Emerging Issues Symposium: Public Policy Breakout
Group 1

10:30 a.m. Contemporary and Emerging Issues Symposium: Public Policy Breakout
Group 2

11:00 a.m. Contemporary and Emerging Issues Symposium: Public Policy Panel Discussion
Douglas Steele 1, Kenneth Sewell 2, Deb Hamernik 3, Erdogan Memili 4, John Blanton 5
1Food, Agriculture, & Natural Resources (FANR), 2Oklahoma State University, 3Institute of Food Production and Sustainability, USDA NiFA, 4Prairie View A&M University, 5Purdue University
Ruminant Nutrition III: Additives
Chair: Jhones Sarturi, Texas Tech University
10:15 AM - 12:20 PM
301 A/B

10:15 a.m.  Ruminant Nutrition III: Additives Introduction

10:20 a.m.  337  Effects of Dietary Supplementation of Saccharomyces Cerevisiae-based Microbial Additive Containing Fermentation Products on Health, and Performance of Weaned Beef Steers During a 35-d Receiving Period
Modoluwamu Idowu 1, Godstime A. Taiwo 1, Ibukun M. Ogunade 1, Andres A. Pech-Cervantes 2
1West Virginia University, 2Fort Valley State University

10:35 a.m.  339  Growth Performance and Carcass Characteristics of Feedlot Beef Yearling Steers Offered Finishing Diets with Direct Fed Microbial Mixtures
Alejandra M. Lopez 1, Jhones O. Sarturi 1, Darren D. H. Henry 2, Francine M. Messias Ciriaco 2, Bradley J. Johnson 1, Dale R. Woerner 1, Kaliu G. Silva 1, Kaue Tonelli Nardi 1, Camron J. Rush 1, Barbara Rodrigues 1, Sarah Peters 1, Mikala Di Manna 3, Andrea M. Osorio-Doblado 2, Kymberly Coello 2, Angel A. Quijada 2
1Texas Tech University, 2University of Georgia, 3New Mexico State University

10:50 a.m.  340  Growth Performance and Carcass Characteristics of Beef Steers Consuming Finishing Diets with an Added Nutritional Packet in a Calf-fed System
Camron J. Rush 1, Jhones O. Sarturi 1, Darren D. H. Henry 2, Francine M. Messias Ciriaco 2, Dale R. Woerner 1, Nelson O. Huerta-Leidenz 1, Whitney L. Crossland 1, Alejandra M. Lopez 1, Kaliu G. Silva 1, Kaue Tonelli Nardi 1, Sarah Peters 1, Mikala Di Manna 3, Jordan Hinds 1, Yasmim Saes 1, Andrea M. Osorio-Doblado 2, Kymberly Coello 2, Angel A. Quijada 2
1Texas Tech University, 2University of Georgia, 3New Mexico State University

11:05 a.m.  342  Effects of Direct Fed Microbial Mixtures on Beef Cattle Ruminal Fermentation Characteristics, Intake, and Nutrient Digestibility
Kaliu G. Silva 1, Jhones O. Sarturi 1, Darren D. H. Henry 2, Bradley J. Johnson 1, Alejandra M. Lopez 1, Barbara Rodrigues 1, Kaue Tonelli Nardi 1, Camron J. Rush 1, Sarah Peters 1, Angela Camarillo 1, Ashleigh Wilson 1
1Texas Tech University, 2University of Georgia

11:20 a.m.  338  The Impact of an Aspergillus Oryzae Prebiotic on Mineral Bioavailability in Multiparous Beef Cows Supplemented with Vitaferm Concept-aid
Federico Podversich 1, Tessa M. Schulmeister 1, Federico Tarnonsky 1, Gastón Alfaro 2, Gleise Da Silva 3, Juan Vargas 1, Araceli B. Maderal 1, Angela M. Gonella 1, Ignacio R. Ipharraguerre 4, Nicolas DiLorenzo 5
1University of Florida, 2Auburn University, 3University of Alberta, 4Christian Albrechts University of Kiel, 5Department of Animal Sciences, North Florida Research and Education Center (NFREC), University of Florida, Marianna, FL
11:35 a.m.  335  **25-hydroxyvitamin D3 Associated with Essential Oils and α-amylase Increases the Performance of Cattle in Intensive Pasture finishing**  
Daniel I. C. G. Gouvêa 1, Maria B. Niehues 2, Alexandre Perdigão 3, Victor Valério de Carvalho 4, Tiago S. S. Acedo 5, Guilherme S. F. M. Vasconcellos 6, Gustavo V. Polycarpo 7, Cynthia L. L. Martins 1, Márió B. D. B. Arrigoni 1  
1São Paulo State University (Unesp), FMVZ Botucatu, SP, Brazil, 2São Paulo State University, Botucatu, Brazil, 3DSM Nutritional Products Brazil, 4dsm-firmenich, 5DSM Nutritional Products, 6DSM Nutritional Products A.S, SP, Brazil, 7São Paulo State University (Unesp), FCAT Dracena, SP, Brazil

11:50 a.m.  341  **Effects of Supplemental Betaine on Protein Deposition and Plasma Amino Acid Concentrations in Growing Steers with Modulated Methyl Group Status**  
Madeline S. Grant 1, Jessica M. Marsh 2, Kathryn J. Hazlewood 2, Matt D. Miesner 3, Evan C. Titgemeyer 1  
1Kansas State University, 2Department of Animal Sciences and Industry, Kansas State University, 3Department of Clinical Sciences, Kansas State University

12:05 p.m.  336  **Anavrin®, Monensin or Both on the Diet of Finishing Steers Fed TMR? Effect on Performance and Rumen Fermentation**  
Eliana Y. Ciancio Bruni Falero 1, Álvaro Santana 2, Hugo Diez 1, Emanuel Longueira 1, Dermidio M. Hernández 1, José Luis Repetto 2, Cecilia Cajarville 3  
1Instituto de Producción Animal, Facultad de Veterinaria, Universidad de la República, Ruta 1 km 42.5, San José, Uruguay, 2Unidad Académica de Bovinos, Departamento de Producción Animal y Salud de los Sistemas Productivos, Universidad de la República, Facultad de Veterinaria, Ruta 1 km 42.5, San José, Uruguay, 3Unidad Académica de Nutrición Animal, Departamento de Producción Animal y Salud de los Sistemas Productivos, Universidad de la República, Facultad de Veterinaria, Ruta 1 km 42.5, San José, Uruguay

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**Ruminant Nutrition V: Calf Nutrition and Management**  
Chair: Robin Anderson, USDA/ARS, Southern Plains Agricultural Research Center’s Food & Feed Safety Research Unit  
10:45 AM - 12:20 PM  
301 C/D

10:45 a.m.  **Ruminant Nutrition V: Calf Nutrition and Management Introduction**

10:50 a.m.  357  **The Effects of Colostrum Consumption and Feed Restriction on Performance, Energy Balance, and Behavior in Unweaned Male Holstein Calves Being Marketed and Transported**  
Lucía Pisoni 1, Maria Devant 2, Anna Bassols 3, Joan Pujols 4, Yolanda Saco 3, Nestor Gomez 3, Sonia Martí 2  
1IRTA-Ruminant Production, 2IRTA, Ruminant Production, 3UAB- Faculty of Veterinary Science, Department of Biochemistry and Molecular Biology, 4IRTA-Animal Health

11:05 a.m.  358  **Gastrointestinal Permeability in Unweaned Male Holstein Calves: Colostrum Consumption and Feed Restriction Matters**  
Lucía Pisoni 1, Maria Devant 2, Anna Bassols 3, Joan Pujols 4, Yolanda Saco 3, Nestor Gomez 3, Sonia Martí 2  
1IRTA-Ruminant Production, 2IRTA, Ruminant Production, 3UAB- Faculty of Veterinary Science, Department of Biochemistry and Molecular Biology, 4IRTA-Animal Health
11:20 a.m. 355  **Growth Performance of Neonatal Holstein Heifer Calves Fed Milk Containing Essential Oil Blend And/or Encapsulated Butyrate**
Ting Liu ¹, Luo Zhihao ¹, Peng Li ¹, Jianping Wu ¹, David P. Casper ²
¹Gansu Agricultural University, ²Casper's Calf Ranch

11:35 a.m. 356  **Neonatal Holstein Calves Fed a Pelleted Calf Starter Containing a Botanical Extract and Direct Fed Microbial Alone or in Combination**
David P. Casper ¹, Lydia K. Olagunju ², Uchenna Y. Anele ², Michael Officer ³, Keith Klanderman ⁴
¹Casper's Calf Ranch, ²North Carolina Agricultural and Technical State University, ³Pacer Technology, ⁴Adisseo Inc.

11:50 a.m. 353  **Neonatal Holstein Calves Fed a Pelleted Calf Starter Containing a Botanical Extract and Direct-fed Microbial (DFM) Alone or in Combination Without or with Milk Replacer DFM**
David P. Casper ¹, Lydia K. Olagunju ², Uchenna Y. Anele ², Michael Officer ³, Keith Klanderman ⁴
¹Casper's Calf Ranch, ²North Carolina Agricultural and Technical State University, ³Pacer Technology, ⁴Adisseo Inc.

12:05 p.m. 354  **Evaluation of Protein Encapsulated Fat (PEF) Alternatives for Neonatal Calves**
David P. Casper ¹
¹Casper's Calf Ranch

**Poster Session III**
12:00 PM - 1:15 PM
Exhibit Hall A

12:00 p.m. PSIII-18  **Effect of Various Adaptogens on the Amino Acid and Fatty Acid Composition of the Longissimus Dorsi Muscle from Kazakh White-headed Bulls**
Jela Tepavcevich ¹, Ruzel Khabibullin ², Irina Mironova ², Ilvir Khabibullin ², Lyudmila Nikolaeva ², Irina Vasilyeva ³
¹University of Belgrade, ²Bashkir State Agrarian University, ³Federal State Autonomous Educational Institution of Higher Education I.M. Sechenov First Moscow State Medical University of the Ministry of Health of the Russian Federation (Sechenov University)

12:00 p.m. PSIII-4  **Evaluating Potential Interactive Effects of the IGF2 intron3 g.3072a Substitution and Myostatin Loss-of-function on Growth in Mice**
Xuenan Chen ¹, Anna Dilger ², Jonathan Beever ³
¹University of Illinois, ²University of Illinois at Urbana-Champaign, ³University of Tennessee Institute of Agriculture
12:00 p.m.  PSIII-5 Evaluation of GnRH Administration Day in the 7 & 7 Synch Protocol for Fixed-timed Artificial Insemination in Multiparous Beef Cows
Wyatt E. Weber 1, Jeremy G. Powell 2, Brittni P. Littlejohn 3, Bernard W. Krumpelman 4, Nate T. Moss 5, M. S. Gadberry 6, Charles R. Looney 1
1 University of Arkansas, 2 University of Arkansas System Division of Agriculture, 3 University of Arkansas System Division of Agriculture, Department of Animal Science, 4 University of Arkansas, Division of Agriculture, Department of Animal Science, 5 UA Livestock and Forestry Station, 6 University of Arkansas, Livestock Research and Forestry Station

12:00 p.m.  PSIII-6 Evaluation of Later Timepoints for Fixed-timed Artificial Insemination of Beef Heifers When Using Sex-sorted Semen Following the 14-d CIDR®-PG Protocol
Genevieve VanWye 1, Emily G. Smith 1, Carson M. Oney 1, Christine Spinka 1, Scott E. Poock 1, Jordan M. Thomas 1
1 University of Missouri

12:00 p.m.  PSIII-7 Evaluation of Maternal Selenium Supplementation and Plane of Nutrition During Gestation on the Neonatal Fc Receptor (FcRn) in Lamb Intestinal Tissue
Maverick C. Guenther 1, Carolyn J. Hammer 2, Rachel A. Voigt 1, Pawel P. Borowicz 1, Tammi L. Neville 3, Kimberly A. Vonnahme 4, Dale A. Redmer 1, Larry P. Reynolds 1, Joel S. Caton 1
1 North Dakota State University, 2 Department of Animal Sciences, North Dakota State University, 3 USDA- NIFA, 4 Zoetis

12:00 p.m.  PSIII-8 Evaluation of Reproductive Efficiency of Holstein Nulliparous Heifers Carrying the SLICK1 Mutation of the Prolactin Receptor (PRLR) Gene
Allie T. Carmickle 1, Anna C. Denicol 1
1 University of California, Davis

12:00 p.m.  PSIII-19 Growth Performance, Carcass Traits, and Meat Quality of Pigs from Divergent Groups for Pork Loin Tenderness
Gabryella Luiza F. Sáo José 1, Amoracyr José C. Nuñez 1, Luiz F. Brito 2, Allan P. Schinckel 2, Vanessa Livian A. Pereira 1, Albino Luchiari Filho 3, Adriana S. do Carmo 1, Aline Cesar 4, Vivian V. Almeida 1
1 Department of Animal Science, Federal University of Goiás, Goiânia, GO, Brazil, 2 Purdue University, 3 LinBife, Piracicaba, SP, Brazil, 4 Department of Agri-Food Industry, Food and Nutrition, University of São Paulo, Piracicaba, SP, Brazil

12:00 p.m.  PSIII-9 Hempseed Meal as an Effective Protein Supplement for Finishing Wethers
Mercer Butts 1, Harrison D. Hallmark 2, Roderick Gonzalez Murray 3, Leeroy Lente 1, Octavio Guimaraes 1, Gabriel Garcia 1, meghan P. Thorndyke 1, Jasmine A. Dillon 1, Shawn L. Archibeque 1
1 Colorado State University, 2 Colorado State University, Department of Animal Sciences, 3 researcher

12:00 p.m.  PSIII-1 Impact of Low Levels of Tannin Supplementation on Enteric Methane Emissions and Performance in Organic Dairy Heifers
Ashley K. Schilling 1, Lauren K. Newman 2, Mesa B. Kutz 2, Samantha M. Clark 2, Logan R. Thompson 1, Kim R. Stackhouse-Lawson 3
1 Colorado State University AgNext, 2 Colorado State University, 3 AgNext, Colorado State University
12:00 p.m.  PSIII-10  Modified-live Virus Respiratory Vaccines and Bovine Respiratory Disease Influence the Respiratory Microbiome of Cattle
Taylor McAtee 1, Sherri Powledge 1, Lee Pinnell 2, Paul Morley 2, John T. Richeson 1
1West Texas A&M University, 2Texas A&M University

12:00 p.m.  PSIII-12  Palatability of Hempseed Meal Pellets Compared to Mainstream Feedstuffs in Horses
Ryon W. Springer 1, Teighlor D. Cross 2, Cheyenne, A. C. Mason 2, Kallyn S. Ciesynski 2, Lillian F. Esterl-Byrne 2, Caitlan C. Thorne 2, Kimberly A. Guay 1, Kimberly B. Wellmann 1, Trinette N. Jones 1
1Department of Animal Science, Tarleton State University, 2Tarleton State University

12:00 p.m.  PSIII-13  Performance and Resiliency of Lactating Does and Their Kids in Woodlands with Supplemental Feedstuffs or Grazing
Bhuwan Shrestha 1, Uma Karki 1, Santoshi Chaudhary 1, Anand Tiwari 2, Lila B. Karki 3
1Tuskegee University, 2University of Maryland, 3University of Maryland Eastern Shore

12:00 p.m.  PSIII-14  Reproductive Microbiome and Cytokine Profiles of Postpartum Beef Cows in Relation to Fertility
Molly S. Smith 1, Kyle J. Hickman-Brown 1, Brooke E. McAnally 1, Ramiro V. Oliveira 1, Gabriela Dalmaso 1, Ky G. Pohler 1, Rebecca K. Poole 1
1Texas A&M University

12:00 p.m.  PSIII-15  Standardized Amino Acid Digestibility and Protein Quality of Mealworm-based Ingredients Using the Precision-fed Cecctomized Rooster Assay
Meredith Smola 1
1University of Illinois at Urbana-Champaign

12:00 p.m.  PSIII-20  The Effect of Waiting Time at the Lairage of Slaughterhouse of Fattening Bulls After a Long Transport on Animal Behavior, Carcass Quality and Meat Quality
Denise Pamela Sanchez 1, Joel González González 2, Guillem De Planell 3, Eliseu Isla 4, Sara Bover 5, Maria Font 2, Maria Devant 6, Sonia Marti 6
1IRTA-Ruminant Production, 2IRTA-Food Quality and Technology, 3Grup Viñas, 4Cooperativa d'Ivars, 5IRTA-Food Safety and Functionality, 6IRTA, Ruminant Production

12:00 p.m.  PSIII-16  The Influence of Olive Byproduct Supplementation on American Wagyu Feedlot Performance and Carcass Characteristics
Briana V. Tangredi 1, Huey Yi Loh 1, meghan P. Thorndyke 1, Octavio Guimaraes 1, Harrison D. Hallmark 2, Erlene Chek 1, Gabriel Garcia 1, Michaella R. Bigliardi 1, Ryan J. Gifford 1, Allison N. Vautier 1, Devin Osborne 1, Jerica A. Engle 5, Sophie M. Zuchegno 1, Courtney M. Athens 1, Sally R. Gallop 1, Miranda L. Zuvich 1, Alexandra C. Miller 1, Terry E. Engle 1
1Colorado State University, 2Colorado State University, Department of Animal Sciences, 3Researcher

12:00 p.m.  PSIII-2  The Microrna Profile of Day 30 Pregnant Ipsilateral or Non-pregnant Bovine Uterus
Erin M. Amss 1, Keelee J. McCarty 2, Nathan Clemson University Long 2, Nathan Long 2
1Animal and Veterinary Sciences, Clemson University, USA, 2Clemson University
12:00 p.m.  PSIII-17  Transcriptome Response of Granulosa Cells to Seasonal Heat Stress in Beef Cows
Kamryn Joyce 1, Ahmed Gad 2, Nico G. Menjivar 2, Daniella C. Heredia 1, Camila Santos Rojas 1, Dawit Tesfaye 2, Angela M. Gonella 1
1University of Florida, 2Colorado State University

Animal Behavior and Well-Being: Swine and Other Species
Chair: Jay Johnson, USDA-ARS Livestock Behavior Research Unit
12:30 PM - 2:20 PM
205 A/B

12:30 p.m.  Animal Behavior and Well-Being: Swine and Other Species Introduction

12:35 p.m.  1 Associations Between Resilience to Early-life Stress and Behavior in Finishing Gilts
Andrea M. Luttman 1, Bora Lee 1, Janice M. Siegford 1, Nancy E. Raney 1, Juan P. Steibel 1, Catherine W. Ernst 1
1Michigan State University

12:50 p.m.  2 Vibration Profiles of Commercial Straight-deck Trailers Transporting Market-weight Pigs During Summer
Daniela A. Alambario 1, Benjamin Davis 1, Benjamin Morris 1, John M. Gonzalez 1, Kari K. Turner 1
1University of Georgia

1:05 p.m.  3 Towards Automated Behavior Analysis for Individually Housed Piglets – Sampling Considerations
Tawni N. Williams 1, Angela R. Green-Miller 2, Ryan N. Dilger 3, Jiangong Li 1
1University of Illinois at Urbana-Champaign, 2University of Illinois, 3University of Illinois Urbana-Champaign

1:20 p.m.  4 Evaluating the Use of Leukocyte Coping Capacity as a Measure of Acute Stress in Growing Pigs During a Cycling Heating Period
Mary L. Kasakam 1, Jennifer M. Young 1, Christopher J. Byrd 1
1Department of Animal Sciences, North Dakota State University

1:35 p.m.  5 The Use of Alginate Hydrogel Beads During Pig Transportation
Emerald Julianna Salinas 1, John J. McGlone 1, Anna K. Johnson 2, Arlene Garcia 1
1Texas Tech University, 2Iowa State University

1:50 p.m.  6 Validation and Application of a Survey of On-farm Worker Attitudes Towards Euthanasia
Nancy F. Acevedo Leon 1, Arlene Garcia 1, Katy Schroeder 1, Amy Boren 1, Pablo Lamino 1
1Texas Tech University
Prediction of Culling and Mortality Risks in Group-housed Broilers Using Machine Learning Methods Trained with Time-series Data of Feeding Behavior Traits
Anderson A. Carvalho Alves 1, Arthur F. Araujo Fernandes 2, Fernando B. Lopes 2, Vivian Breen 2, Rachel Hawken 2, Guilherme J. M. Rosa 3
1Department of Animal and Dairy Sciences, University of Wisconsin - Madison, 2Cobb-Vantress, Inc., 3University of Wisconsin-Madison

Physiology and Endocrinology II: The Estrous Cycle, Breeding, and Embryo Transfer
Chair: George Perry, Texas A&M AgriLife Research, Overton, TX
12:30 PM - 3:00 PM
301 A/B

12:30 p.m.  Physiology and Endocrinology II: The Estrous Cycle, Breeding, and Embryo Transfer Introduction

12:35 p.m.  Awardee Talk: Innovations in Bovine Reproductive Management: What the Future Holds
Ky G. Pohler 1
1Texas A&M University

1:05 p.m.  Effects of Presynchronization with Prostaglandin F2α and a Progestin, and Delayed Insemination on Pregnancy Rates with Sexed Semen in Replacement Beef Heifers
Nicky Oosthuizen 1, Kristina Porter 2, Samir Burato 3, Lucas Melo Goncalves 3, Ky G. Pohler 4, Pedro L.P Fontes 3, Cliff C. Lamb 4
1ABS Global, 2Porter Veterinary Service, 3University of Georgia, 4Texas A&M University

1:20 p.m.  Synchronization and Seasonality Effects on Follicular Development, Estrus Expression, and Pregnancy in Brahman Females
Lacey K. Quail 1, Kaitlin M. Epperson 1, Jaclyn N. Ketchum 1, Chloey Guy 2, Chalies Long 3, George A. Perry 4
1Department of Animal Science, Texas A&M University, College Station, TX, 2Texas A&M AgriLife Research Center, Overton, 3Texas A&M AgriLife Research, Overton, 4Texas A&M AgriLife Research, Overton, TX

1:35 p.m.  Evaluation of Two Beef Cow Fixed-time AI Protocols That Utilize Presynchronization
Jaclyn N. Ketchum 1, Lacey K. Quail 1, Kaitlin M. Epperson 1, Chloey Guy 2, Jerica JJ Rich 3, Saulo Menegatti Zoca 4, Adalaide Kline 4, Taylor N. Andrews 5, Julie Walker 6, Pedro L.P Fontes 7, Sandy Johnson 8, Megan P. Owen 9, Kelsey M. Harvey 10, Adam F. Summers 5, George A. Perry 11
1Department of Animal Science, Texas A&M University, College Station, TX, 2Texas A&M AgriLife Research Center, Overton, 3College of Agriculture, Arkansas State University, 4South Dakota State University Department of Animal Science, Brookings, SD, 5New Mexico State University, 6South Dakota State University, 7University of Georgia, 8Kansas State University Northwest Research & Extension Center, Colby, KS, 9Texas A&M University Commerce, 10Mississippi State University, 11Texas A&M AgriLife Research, Overton, TX

1:50 p.m.  Physiology and Endocrinology II Break
2:00 p.m.  288  Chemical Characterization of the Marking Fluid of Breeding and Non-breeding Male Cheetahs
Giulia Esposito 1, Alexia Tommasi 2, Andreas G.J. Tredoux 3, Jacek A. Koziel 4
1Department of Veterinary Medicine, University of Parma, Param, Italy, 2Department of Animal Sciences, Faculty of AgriSciences, Stellenbosch University, 7600, Stellenbosch (WC, South Africa, 3Department of Chemistry and Polymer Sciences, Faculty of Science, Stellenbosch University, 4Dept. of Agricultural & Biosystems Engineering 4350 Elings Hall, Iowa State University, Ames, IA 50011, USA

2:15 p.m.  290  Effects of Exogenous Follicle Stimulating Hormone Prior to Embryo Transfer on Beef Cow Recipients
Jamie E. Larson 1, Bryan Carter 1, Tate Johnson 1, Rebecca M. Swanson 1, Riley D. Messman 1, Caleb O. Lemley 1
1Mississippi State University

2:30 p.m.  287  Impact of Pre- and Post-natal Nutritional Extremes on Responsiveness of Ovariectomized, Sexually Mature Heifers to a Neurokinin B Agonist During Progesterone Dominance
Viviana Garza 1, Julie I. Kellerman 2, Rodolfo C. Cardoso 1, Gary L. Williams 2
1Texas A&M University, 2Texas A&M AgriLife Research

2:45 p.m.  289  Sperm Quality Assessments Using Flow Cytometry Do Not Differ Between Angus and Charolais Breeds of Yearling Bulls Meeting Breeding Soundness Exam Threshold Requirements
Ashley R. Hartman 1, Ian E. Batey 1, Theresa J. Rathbun 1, Abby L. Zezeski 2, Tom W. Geary 2, David M. Griege 1, Karol E. Fike 1
1Kansas State University, 2USDA-ARS

Ruminant Nutrition VI: Nutrition II
Chair: Robin Anderson, USDA/ARS, Southern Plains Agricultural Research Center’s Food & Feed Safety Research Unit
1:00 PM - 2:20 PM
207 A/B

1:00 p.m.  Ruminant Nutrition VI: Nutrition II Introduction

1:05 p.m.  362  Evaluation of Different Levels of Trace Mineral Supplementation to Calves Prior to Wearing
Gracia M. P. Hernandez 1, Derringer Boyd 1, Julia Livingston 1, Garrett Gossbodily 1, David W. Bohnert 2, Juliana Ranches 2
1Oregon State University, 2Oregon State University; EOARC

1:20 p.m.  364  Comparison of Semi-confined and Pasture-based Fall Calving Beef Cow Systems
Hannah Speer 1, Mary E. Drewnoski 1
1University of Nebraska-Lincoln

1:35 p.m.  363  In vitro Dry Matter and Fiber Digestibility of Different Varieties of Peanut Tops and Bermuda Grass Forage
Joseph J. Baloyi 1, Todd R. Callaway 2, Jefferson M. Lourenco 2
1University of Venda, 2University of Georgia
1:50 p.m. 359 Using an Extruded 100% Dried Distillers' Grains Cube to Intensify Production in a Stocker Grazing Enterprise on Native Range in Northwestern Oklahoma
Zane N. Grigsby 1, Stacey A. Gunter 2, Paul A. Beck 1
1Oklahoma State University, 2USDA-ARS, Oklahoma and Central Plains Agricultural Research Center

2:05 p.m. 360 The Ability of an Enhanced Zeolite-based Flow Agent to Mitigate the Effects of Ergot-like Alkaloids Consumed by Beef Cattle
Joshua M. Zeltwanger 1, Eric Bailey 1, Jerilyn Hergenreder 2, Landon Canterbury 3, Derek W. Brake 1, Emily A. Petzel 1, Benjamin Nelson 4, Du Xiangwei 5, Tim Evans 5
1University of Missouri, 2Kemin Industries Inc., 3Kemin Industries, 4Animal, 5College of Vet Med

Beef Species and Ruminant Nutrition Symposium II: New Advances in Ruminant Nutrition
Chair: Andrew Foote, Oklahoma State University; Joel Caton, North Dakota State University
1:00 PM - 4:20 PM
Ballroom B

1:00 p.m. Beef Species and Ruminant Nutrition Symposium II Introduction

1:05 p.m. 93 Predicting Metabolizable Energy from Digestible Energy for Growing and Finishing Beef Cattle and Relationships to Prediction of Methane
Kristin E. Hales 1, Michael Galyean 2
1Texas Tech University, 2Texas Tech University Department of Veterinary Medicine

1:50 p.m. 95 Micronutrient Research Needs for the Next Beef NASEM
Stephanie L. Hansen 1, Mary E. Drewnoski 2, Dathan T. Smerchek 1
1Iowa State University, 2University of Nebraska-Lincoln

2:35 p.m. Beef Species and Ruminant Nutrition Symposium II Break

2:50 p.m. 94 The Present and Future of NASEM Beef Nutrient Requirement Modeling
Robin R. White 1
1Virginia Tech School of Animal Sciences

3:35 p.m. 93 Research Needs to Advance Nutrient Requirements for Beef Cattle: Ninth Revised Edition
Clint Krehbiel 1
1University of Nebraska-Lincoln

Poster Session IV-A
1:30 PM - 2:45 PM
Exhibit Hall A

1:30 p.m. PSIV-A-1 Assessment of Equine Acclimation to New Management Using Non-invasive Metrics
Bethany Baxley 1, Nichole C. Anderson 1
1Texas Tech University
1:30 p.m.  PSIV-A-2  Beef Genetics in the Dairy Management System: Management System and Maternal Genetic Effects on Calf Growth and Body Measurements
Luke K. Fuerniss 1, James D. Young 1, Jerica R. Hall 1, Kaitlyn R. Wesley 1, Oscar J. Benitez 1, Ryan R. Rathmann 1, Bradley J. Johnson 1
1Texas Tech University

1:30 p.m.  PSIV-A-3  Body Temperature Monitoring Using Subcutaneously and Vaginal Sensors in Grazing Cows
Barbara Roqueto dos Reis 1, Robin R. White 2
1Department of Animal and Poultry Sciences, Virginia Tech, 2Virginia Tech School of Animal Sciences

1:30 p.m.  PSIV-A-4  Characterization of Heat Stress and Recovery on Productive Performance and Physiological Indicators, Blood and Milk Characteristic, and Gene Expression in Early Lactating Holstein Cows
JangHoon Jo 1, Ghassemi Nejad Jali 2, WonSeob Kim 3, DongQiao Peng 4, YongHo Jo 1, Hye Ran Kim 5, Nam Geon Park 6, HongGu Lee 6
1Department of Animal Science and Technology, Konkuk University, 2Department of Animal Science and Technology, Sanghuh College of Life Science Konkuk University, Seoul 05029, Republic of Korea, 3Michigan State University, 4Department of Animal Science, College of Animal Science, Jilin University, 5333 Xi’an Road Changchun City, Jilin Province, 130062, P.R. China, 5Animal Nutrition and Physiology Team, National Institute of Animal Science, RDA, Wanju 55365, Republic of Korea, 6Department of Animal Science and Technology, Sanghuh College of Life Science, Konkuk University, Seoul 05029, Republic of Korea

1:30 p.m.  PSIV-A-5  Comparison of Left vs Right Body Composition Endpoints in Beef Cattle Using Carcass Ultrasound
Noah P. Jesko 1, Travis C. Tennant 1, Ty E. Lawrence 1, Tommy L. Perkins 1
1West Texas A&M University

1:30 p.m.  PSIV-A-6  Computer Vision System to Predict Famacha© Degree in Sheep from Ocular Conjunctiva Images
Luara Freitas 1, Rafael Ferreira 2, Rodrigo Savegnago 3, Joao R. R. Dorea 2, Guilherme J. M. Rosa 2, Claudia Paz 4
1University of Sao Paulo - University of Wisconsin-Madison, 2University of Wisconsin-Madison, 3Michigan State University, 4Animal Science Institute

1:30 p.m.  PSIV-A-7  Decreasing the Frequency of Precalving Protein and Energy Supplementation Impacts Preweaning Growth of Bos Indicus-influenced Beef Offspring but Not Their Dam
Vinicius de Souza Izquierdo 1, Marcelo Vedovatto 1, Elizabeth A. Palmer 1, Rhaiza Oliveira 1, Joao Vendramini 2, Philippe Moriel 2
1University of Florida - Range Cattle Research & Education Center, 2University of Florida

1:30 p.m.  PSIV-A-8  Development of Automated Computer Vision Systems for Evaluating Dairy Cow Body Weight and Body Condition Scores
Ye Bi 1, Robert Kadlec 1, Kayla Castro 1, Sam Indest 1, Sabrina Amorim 1, Gota Morota 2
1Virginia Tech, 2School of Animal Sciences, Virginia Polytechnic Institute and State University
1:30 p.m.  PSIV-A-9  Effect of Three Different Initial Implant Programs on Beef × Dairy Steer Feedlot Performance and Carcass Characteristics
Kaitlyn R. Wesley 1, Alyssa B. Word 2, Ben P. Holland 2, Kendall J. Karr 2, John P. Hutcheson 3, Lee-anne J. Walter 3, Bradley J. Johnson 1
1Texas Tech University, 2Cactus Research, 3Merck Animal Health

1:30 p.m.  PSIV-A-10  Effects of Canola Meal Inclusion in Gestation and Lactation Diets with or Without Probiotic on Sow Performance, Milk Composition and Piglet Performance
Xiaoxiao Zhang 1, Debora Muratori Holanda 1, Charles Martin Nyachoti 1, Jinyoung Lee 1
1University of Manitoba

1:30 p.m.  PSIV-A-11  Effects of Supplementing Extruded Dried Distillers’ Grains Cubes to Stocker Cattle Grazing Introduced Pastures on Subsequent Feedlot Performance and Carcass Characteristics
Jordan M. Adams 1, Luis O. Tedeschi 1, Paul A. Beck 2
1Texas A&M University, 2Oklahoma State University

1:30 p.m.  PSIV-A-12  Effects of Treating Primary Bovine Satellite Cells Cultures Inducted to Differentiate with Steroid Hormones, Zinc or Manganese on Creatine Kinase Activity
Anthony F. Alberto 1, Laura A. Motsinger 2, Stephanie L. Hansen 3, Kara J. Thornton 1, Bailee Brown 1
1Utah State University, 2Hill's Pet Nutrition, 3Iowa State University

1:30 p.m.  PSIV-A-13  Estimation of Nellore Genetic Contribution over Certified Angus Beef Sold in Brazil
Cris Luana de Castro Nunes 1, Fabyano Fonseca e Silva 1, Renata Veroneze 1, Marcio de Souza Duarte 2, Simone Eliza Facioni Guimarães 1, Luiz Antônio Josakian 3, Henrique Torres Ventura 3, Mario Luiz Chizzotti 1
1Universidade Federal de Viçosa, 2University of Guelph, 3Brazilian Association of Zebu Breeders, ABCZ

ASAS Diversity, Equity and Inclusion Symposium
Chair: Shawn Archibeque, Colorado State University
1:30 PM - 3:30 PM
201

1:30 p.m.  ASAS Diversity, Equity and Inclusion Symposium Introduction

1:35 p.m.  401  Cooperative Extension in Indigenous Communities: Perspectives of 1862 and 1994 Extension Educators
Katie Hartmann 1
1Iowa State University

2:15 p.m.  402  The Silver Linings of a Pandemic
Olga Bolden -Tiller 1
1Tuskegee University

2:55 p.m.  ASAS Diversity, Equity and Inclusion Symposium Panel Discussion
Determining the Effect of Zinc Status on Eye Health and Its Relationship with Infectious Bovine Keratoconjunctivitis in Beef Calves
Reagan N. Cauble 1, Michael Hickinbotham 2, Beth B. Kegley 3, Jeremy G. Powell 4
1University of Arkansas, 2University of Arkansas Department of Animal Science, 3University of Arkansas Division of Agriculture, 4University of Arkansas System Division of Agriculture

Effects of Different Prenatal Nutrition Strategies on Liver Metabolome of Bulls and Its Correlation with Body and Liver Weight
Guilherme H. Polizel 1, Evandro Dias 1, Brenda T. Carmona 1, Gianluca C. Santos 1, Isabela Mortari 1, Nara P. Garcia 1, Miguel H. Santana 2
1College of Animal Science and Food Engineering FZEA/USP, 2College of Animal Science and Food Engineering FZEA; São Paulo University - USP

Effects of Replacing Cottonseed Meal with Carinata Meal on Performance, Intake, and Digestibility in Backgrounding Beef Heifers Consuming a Corn Silage-based Diet
Tessa M. Schulmeister 1, Federico Tarnonsky 1, Federico Podversich 1, Juan Vargas 1, Ignacio Fernandez Marenchino 1, Araceli B. Maderal 1, Wilmer Cuervo 1, Camila Gomez Lopez 1, Angela M. Gonella 1, Jose C. B. Dubeux 1, Nicolas DiLorenzo 2
1University of Florida, 2Department of Animal Sciences, North Florida Research and Education Center (NFREC), University of Florida, Marianna, FL

Effects of Weaning Method on Performance of Crossbred Beef Calves
Whitney L. Rook 1, Daniel Rivera 2, Cody Shelton 1, Cyle C. Jones 3
1University of Arkansas, 2University of Arkansas Southwest Research and Extension Center, 3University of Arkansas Division of Agriculture

Effects of Winter Hair Shedding Level and Service Sire Breed on Cow-calf Performance of a Spring-calving Herd in the Southeastern United States
Emily G. Hayes 1, Kaylee Hurt 1, Maria L. Leite-Browning 1, Richard Browning 1
1Tennessee State University

Fetal Programming Effects on Weight Gain and Backfat Thickness in Nellore Heifers
Miguel H. Santana 1, Roberta Cracco 2, Arícia C. Fernandes 2, Cynhtia de Carli 2, Geovana C. Baldin 2, Guilherme H. Polizel 2
1College of Animal Science and Food Engineering FZEA; São Paulo University - USP, 2College of Animal Science and Food Engineering FZEA/USP

Genome-wide Association Analyses Revealed Potential Molecular Mechanisms Affecting Milk Fever in Dairy Cattle
Morgan A. Lunn 1, Sydney Gillette 2, Fernando Campos 3, Daniel Peterson 3, Kim Sprayberry 3, Mehdi Sargolzaei 4, Gary McArthur 5, Paul Anderson 6, Michael La Frano 7, Siroj Pokharel 3, Mohammed Abo-Ismail 8
Ruminant Nutrition IV: Nutrition I
Chair: Jhones Sarturi, Texas Tech University
2:00 PM - 4:30 PM
206 A/B

Ruminant Nutrition IV: Nutrition I Introduction

2:05 p.m. 344 Impact of Removing 20% Distillers Grains After One-third or Two-thirds of the Feeding Period on Performance of Finishing Yearlings
Sofía Suárez Lorences 1, Braden C. Troyer 1, Mitch M. Norman 1, Pablo L. Loza 2, Rick A. Stock 3, Jim C. MacDonald 3, Galen E. Erickson 3
1University of Nebraska-Lincoln, 2University of Nebraska Lincoln, 3University of Nebraska-Lincoln

2:20 p.m. 347 Using Whole Cottonseed to Replace Dried Distillers Grains Plus Solubles and Prairie Hay in Finishing Rations Balanced for Physically Effective Neutral Detergent Fiber
Kasi N. Schneid 1, Andrew P. Foote 1, Paul A. Beck 1, Blake K. Wilson 1
1Oklahoma State University

2:35 p.m. 348 Including Alfalfa in the Diet of Steers Fed TMR: Effect on Rumen Fermentation and Performance
Eliana Y. Ciancio Bruni Falero 1, Álvaro Santana 2, Juan E. Dayuto 1, María J. Ricci 1, Juan P. Capucho 1, Ana L. González 1, Cecilia Cajarville 3, José Luis Repetto 2
1Instituto de Producción Animal, Facultad de Veterinaria, Universidad de la República, Ruta 1 km 42.5, San José, Uruguay, 2Unidad Académica de Bovinos, Departamento de Producción Animal y Salud de los Sistemas Productivos, Universidad de la República, Facultad de Veterinaria, Ruta 1 km 42.5, San José, Uruguay, 3Unidad Académica de Nutrición Animal, Departamento de Producción Animal y Salud de los Sistemas Productivos, Universidad de la República, Facultad de Veterinaria, Ruta 1 km 42.5, San José, Uruguay

2:50 p.m. 345 Evaluation of the Effects of Hempseed Cake on Ruminal Fermentation Parameters, Nutrient Digestibility, Nutrient Flow, and Nitrogen Balance in Finishing Steers
Thomas Winders 1, Bryan W. Neville 2, Kendall C. Swanson 1
1North Dakota State University, 2USDA, ARS, U.S. Meat Animal Research Center
3:05 p.m. 346 Feeding Hempseed Cake Alters the Bovine Gut, Respiratory and Reproductive Microbiota
Thomas Winders 1, Devin B. Holman 2, Kaycie N. Schmidt 1, David J. Smith 3, Bryan W. Neville 4, Carl R. Dahlen 1, Kendall C. Swanson 1, Samat Amat 5
1 North Dakota State University, 2 Agriculture and Agri-food Canada, 3 US DEPARTMENT OF AGRICULTURE, 4 USDA, ARS, US Meat Animal Research Center, 5 North Dakota State University, Department of Microbiological Sciences

3:20 p.m. Ruminant Nutrition IV: Nutrition I Break

3:30 p.m. 349 Dietary Zinc and Ractopamine Elicit Changes in Gene Expression of Zinc Transporters in the Muscle of Finishing Beef Steers
Erin L. Deters 1, Emma L. Rients 1, Remy Carmichael 1, Olivia N. Genther Schroeder 2, Stephanie L. Hansen 1
1 Iowa State University, 2 Purina Animal Nutrition

3:45 p.m. 343 Effect of Ruminally-protected Lysine Supplementation to Limit-fed Growing Cattle on Growth and Subsequent Finishing Performance
Kathryn J. Hazlewood 1, Madeline S. Grant 2, Dale A. Blasi 2, Gary A. Ducharme 3, Evan C. Tilgemeyer 2
1 Department of Animal Sciences and Industry, Kansas State University, 2 Kansas State University, 3 PROJ-X, Inc.

4:00 p.m. 350 Meta-analysis of the Effects of Dietary Inclusion of Dry Distillers Grains with Solubles (DDGS) on Performance, Fermentation, Carcass Characteristics, and Nitrogen Efficiency in Sheep
Sai Chandan Chelkapally 1, Thomas H. Terrill 1, Andres A. Pech-Cervantes 1
1 Fort Valley State University

4:15 p.m. 351 Mycotoxin Trends in US Total Mixed Rations and Corn Silage
Erin F. Schwandt 1, Paige N. Gott 1, Lan Zheng 1, Ursula Hofstetter-Schähs 1, April W. Levy 1
1 DSM Nutritional Products

Meat Science and Muscle Biology Symposium: Metabolomics Measurements in Determining Meat Quality
Sponsored by Texas A&M Department of Animal Science: Safety, Quality, and Nutrition of Food Products Area of Excellence
Chair: Chris Kerth, Texas A&M University
2:00 PM - 4:45 PM
301 C/D

2:00 p.m. Meat Science and Muscle Biology Symposium Introduction

2:05 p.m. 237 Using Metabolomic Approaches to Understand and Reduce Animal Variation in Meat Quality Traits
Andy King 1, Steven Shackelford 2, Tommy L. Wheeler 3
2:35 p.m. 235 Animal Production and Carcass Traits Affect Meat Quality and Flavor Through Metabolomics
Chris R. Kerth 1
1Texas A&M University

3:05 p.m. Meat Science and Muscle Biology Symposium Break

3:15 p.m. 238 Developing Novel Smart-aging Strategies Through Metabolomics Approach
Brad H. B. Kim 1
1Purdue Univ.

3:45 p.m. 236 Awardee Talk: Metabolomics and Meat Color: A Novel Approach to Understand Molecular Signatures
Ranjith Ramanathan 1
1Oklahoma State University

4:15 p.m. Meat Science and Muscle Biology Symposium Discussion

Ruminant Nutrition VII: Nutrition III
Chair: Sara Trojan, Peak Beef Cattle Nutrition and Management Consulting LLC
2:45 PM - 4:05 PM
207 A/B

2:45 p.m. Ruminant Nutrition VII: Nutrition III Introduction

2:50 p.m. 365 Towards the Integration of Microbial Genomic Information into Mechanistic Models of the Rumen Microbiome: A Theoretical Study
Mohsen Davoudkhani 1, Francesco Rubino 2, Christopher J. Creevey 2, Rafael Muñoz-Tamayo 1
1Université Paris-Saclay, INRAE, AgroParisTech, UMR Modélisation Systémique Appliquée aux Ruminants, 75005, Paris, France, 2Institute of Global Food Security, School of Biological Sciences, Queen’s University Belfast, BT9 5DL, Northern Ireland, UK

3:05 p.m. 366 Effect of Native Rumen Bacteria Supplementation in Methane Emissions, Growth Performance, and Carcass Characteristics of Feedlot Cattle
Alejandro Pittaluga 1, Fan Yang 2, Jordan Embree 2, Sean Gilmore 2, Mallory Embree 2, Alejandro E. Relling 1
1The Ohio State University, 2Native Microbials

3:20 p.m. 368 Effects of Rumen Fermentation Parameters and Microbiota of Sanhe Heifers from Different Altitude Regions
Zhang Xinyu 1, Shengli Li 2
1China agricultural university, 2China Agricultural University

3:35 p.m. 369 Effect of Diet, Rumen Fermentation Parameters and Their Combination on Predicting Milk Production
Sathya Sujani 1, Robin R. White 2
1Department of Animal & Poultry Sciences, Virginia Tech, 2Virginia Tech School of Animal Sciences
Characterization of the Seminal Microbiota in Beef Bulls Subjected to Different Rate of Gains Using 16S rRNA Gene Sequencing and Culturomics

Emily M. Webb 1, Devin B. Holman 2, Kaycie N. Schmidt 1, Matthew S. Crouse 3, Carl R. Dahlen 1, Robert A. Cushman 4, Alexandria P. Snider 5, Kacie L. McCarthy 6, Samat Amat 7
1North Dakota State University, 2Agriculture and Agri-food Canada, 3USDA, ARS, U.S. Meat Animal Research Center, 4USDA, ARS, US Meat Animal Research Center, Livestock Bio-Systems Research Unit, 5USDA, ARS, U.S. Meat Animal Research Center, Livestock Bio-systems Research Unit, 6University of Nebraska, 7North Dakota State University, Department of Microbiological Sciences

Poster Session V-A
3:00 PM - 4:15 PM
Exhibit Hall A

Estrus Response and Pregnancy Rates of Beef Cows Enrolled in Two Fixed-time Artificial Insemination Protocols, with or Without Pre-synchronization
Stefania Pancini 1, Nicholas W. Dias 1, John Currin 1, Sherrie Clark-Deener 1, Jamie L. Stewart 1, Vitor R.G R. G. Mercadante 1
1Virginia Tech

Evaluation of Immune Performance of Calves Born to Cows Vaccinated with a Lifetime Regimen of a Modified-live or Killed Viral Vaccine When Challenged with Bovine Viral Diarrhea Virus
Emily A. Melchior-Tiffany 1, Collin Anderson 1, Shad H. Cox 2, Richard L. Dunlap 2, Shanna L. Ivey 1, John C. Wenzel 1, Eric J. Scholljegerdes 1
1New Mexico State University, 2Corona Range and Livestock Research Center

Insulin in Sheep Under Different Patterns of Heat Stress
Barbara Roqueto dos Reis 1, T. Nguyen 1, Robin R. White 2
1Department of Animal and Poultry Sciences, Virginia Tech, 2Virginia Tech School of Animal Sciences

Novel Method to Identify Cattle Predisposed to Severe Cases of Bovine Respiratory Disease
Victor V. Flores 1, Jennifer A. Hernandez Gifford 1, Blake K. Wilson 2, Craig A. Gifford 1
1New Mexico State University, 2Oklahoma State University

One-carbon Metabolite Supplementation Influences Pancreatic α-amylase Activity and Protein Concentration in a Dose-dependent Manner in Beef Heifers
Ronald J. Trotta 1, Harvey Freely 2, Robert A. Cushman 3, William T. Oliver 4, Amanda Lindholm-Perry 5, Joel S. Caton 6, Alison K. Ward 6, Matthew S. Crouse 2
1University of Kentucky, 2USDA, ARS, U.S. Meat Animal Research Center, 3USDA, ARS, US Meat Animal Research Center, Livestock Bio-Systems Research Unit, 4USDA ARS, 5USDA MARC, 6North Dakota State University

Poor Maternal Nutrition During Gestation Decreases Shear Force and Alters Gene Expression Related to Fibrogenesis
Mia Y. Kawaida 1, Daniela A. Alambarrio 2, John M. Gonzalez 3, Nicole M. Tillquist 1, Amanda S. Reiter 1, Brandon I. Smith 1, Steven A. Zinn 4, Kristen E. Govoni 4, Sarah A. Reed 4
1University of Connecticut, 2University of Georgia, 3University of Georgia, 4Dept. of Animal Science, University of Connecticut
3:00 p.m. PSV-A-7 Quality Assessments of Sperm from Gnrh-ii Receptor Knockdown (KD) Boars
Caitlin E. Ross 1, Ginger A. Mills 1, Amy T. Desaulniers 2, Clay A. Lents 3, Brett R. White 2
1Department of Animal Science, University of Nebraska, 2University of Nebraska-Lincoln, 3USDA, ARS, US Meat Animal Research Center, Livestock Bio-Systems Research Unit

3:00 p.m. PSV-A-8 Reduced Daylength Pre-calving Increases Milk Production Post-calving
Kayla J. Alward 1, Rebecca Cockrum 1, Alison Duncan 1
1Virginia Tech

3:00 p.m. PSV-A-9 Reduction of Salmonella Reading Using a Dairy-originated Probiotic Bacterium, Propionibacterium Freudenreichii in Combination with a Live Attenuated Salmonella Typhimurium Vaccine in Growing Turkeys
Claire Peichel 1, Shijinarah Manjankattil 1, Grace Dewi 1, Luna Akhtar 1, Peter Bina 1, Medora Creek 1, Kerem Deniz 1, John Hobbs 1, Elaina Wichmann 1, Emma Feist 1, Mikayla Schlosser 1, Timothy J. J. Johnson 1, Sally Noll 1, Anup Kollanoor Johny 1
1University of Minnesota

3:00 p.m. PSV-A-10 Single-cell Atlas of Bovine Skeletal Muscle Identifies Mechanisms Regulating Intramuscular Adipogenesis and Fibrogenesis
Leshan Wang 1, Chaoyang Li 1, Qianglin Liu 1, Yuxia Li 1, Peidong Gao 1, Xujia Zhang 1, Matthew Welborn 1, Xing Fu 1
1Louisiana State University

3:00 p.m. PSV-A-11 The Effect of Days on Feed for Feedyard Performance, Health, Carcass, and Organ Characteristics of Angus X Holstein Heifers
Taylor C. Husz 1, Alyssa B. Word 2, Kendall J. Karr 2, Ben P. Holland 2, Ty E. Lawrence 1, Lee-anne J. Walter 3, John P. Hutcheson 3
1West Texas A&M University, 2Cactus Research, 3Merck Animal Health

3:00 p.m. PSV-A-12 The Influence of Calcium Dose and Olive Meal on in-vitro Rumen Fermentation Characteristics
Huey Yi Loh 1, Briana V. Tangredi 1, meghan P. Thorndyke 1, Octavio Guimaraes 1, Devin Osborne 1, Sophie M. Zuchegno 1, Miranda L. Zuvich 1, Courtney M. Athens 1, Jerica A. Engle 2, Ryan J. Gifford 1, Terry E. Engle 1
1Colorado State University, 2Researcher

3:00 p.m. PSV-A-13 Using Canine Olfaction to Detect Bovine Respiratory Disease: An Analysis of Two Dogs’ Performance
Aiden E. Juge 1, Nathaniel Hall 2, John T. Richeson 3, Courtney L. Daigle 4
1Texas A&M University, 2Department of Animal Science, Texas Tech University, 3West Texas A&M University, 4Department of Animal Science, Texas A&M University
Animal Behavior and Well-Being Symposium:
Animal Production Practices and Greenhouse Gasses
Chair: Brenda Alexander, University of Wyoming
3:00 PM - 5:45 PM
205 A/B

3:00 p.m. Animal Behavior and Well-Being Symposium I Introduction

3:05 p.m. 9 Is a Climate Neutral Animal Agriculture Possible?
Ermias Kebreab 1, Eleanor Pressman 1
1UC Davis

3:50 p.m. 11 Balancing Beneficence and Autonomy in Animal Agriculture with a Warming World
Adam Feltz 1, Silke Feltz 1
1University of Oklahoma

4:35 p.m. Animal Behavior and Well-Being Symposium Break

4:45 p.m. 10 Conservation Planning for Greenhouse Gases in Animal Agriculture
Greg Zwicke 1, Allison Costa 1
1USDA-NRCS

5:30 p.m. Animal Behavior and Well-Being Symposium Q&A

Physiology and Endocrinology III: Pregnancy and Fetal Programming
Chair: Alan Ealy, Virginia Polytechnic Institute and State University
3:15 PM - 5:30 PM
301 A/B

3:15 p.m. Physiology and Endocrinology III: Pregnancy and Fetal Programming Introduction

3:20 p.m. 294 Awardee Talk: Porcine Sperm Storage in the Oviduct before Fertilization: A Sweet Spot
David J. Miller 1
1University of Illinois

3:50 p.m. 296 Ergot Alkaloid Consumption Alters Serotonin Receptor-induced Vasoactivity in Ovine Umbilical Vasculature
James L. Klotz 1, Susan K. Duckett 2, Jessi Britt 2, Maslyn A. Greene 2, John G. Andrae 2
1USDA-ARS Forage-Animal Production Research Unit, 2Clemson University

4:05 p.m. 297 Maternal Nutrient Restriction and Melatonin Supplementation Alter Neurotransmitter Profiles in Bovine Fetal and Placental Tissues
Allison R. Harman 1, Zully E. Contreras-Correa 1, Rebecca M. Swanson 1, Mackenzie Ripper 1, Thomas H. Duncan 1, Caleb O. Lemley 1
1Mississippi State University
4:20 p.m. 301 Effect of Maternal Supplementation of Saccharomyces Cerevisiae Var. Boulardii During Late-gestation and Lactation on Progeny Immune Status from Birth to 35 Days-of-age
Lily P. Hernandez 1, Cassidy C. Reddout 2, Janeen L. Salak-Johnson 1
1Oklahoma State University, 2Oklahoma State University- Dept. of Animal and Food Sciences

4:35 p.m. Physiology and Endocrinology III: Pregnancy and Fetal Programming Break

4:45 p.m. 295 Effects of Prenatal Testosterone Excess on Puberty Attainment of First-generation Ewe Lambs
Sara C. Gurule 1, Jessica F. Sustaita-Monroe 1, Renata Landers 1, Leslie King 1, Viviana Garza 1, Sarah Bynum 1, Dylan Arrott 1, Vasantha Padmanabhan 2, Rodolfo C. Cardoso 1
1Texas A&M University, 2University of Michigan

5:00 p.m. 298 Late Gestational Nutrient Restriction of Primiparous Beef Heifers Decreases Neonatal Calf Body Weight and Organ Mass
Colby A. Redifer 1, Abigail R. Rathert-Williams 1, Shelby L. Davies 2, Remie M. Johnson 3, Pamela R. Adkins 3, Allison M. Meyer 1
1University of Missouri, 2Division of Animal Sciences, University of Missouri, 3College of Veterinary Medicine, University of Missouri

5:15 p.m. 299 Differences in Microbial Community Composition Between Uterine Horns Ipsilateral and Contralateral to the Corpus Luteum in Beef Cows on Day 15 of the Estrous Cycle
Madison B. B. Walker 1, Matthew P. Holton 1, Jefferon M. Lourenco 1, Pedro L.P Fontes 1
1University of Georgia

Poster Session V-B
3:15 PM - 4:15 PM
Exhibit Hall A

3:15 p.m. PSV-B-14 Bovine Luteal Cell Apoptosis Following Administration of a Commercial Inactivated or Modified-live Virus Vaccine at Time of AI
Kaitlin M. Epperson 1, Lacey K. Quail 1, Jerica JJ Rich 2, Saulo Menegatti Zoca 3, Taylor N. Andrews 4, Adalaide Kline 5, Frank White 6, Russell F. Daly 7, George A. Perry 8
1Department of Animal Science, Texas A&M University, College Station, TX, 2College of Agriculture, Arkansas State University, 3South Dakota State University, 4New Mexico State University, 5South Dakota State University Department of Animal Science, Brookings, SD, 6Elanco Animal Health, Greenfield, IN, 7South Dakota State University Department of Veterinary & Biomedical Sciences, Brookings, SD, 8Texas A&M AgriLife Research, Overton, TX

3:15 p.m. PSV-B-15 Comparison of the 7-day Cosynch and 8-day Estradiol-based Protocols for Synchronization of Ovulation and Timed Artificial Insemination in Suckled Bos Taurus Cows
Alejandro M. Rodríguez 1, Sebastian Maresca 2, Sebastian O. López-Valiente 3, María G. Bilbao 4, Karen D. Moran 4, Julián A. Bartolome 5, Nathan Clemson University Long 6, Nathan Long 6
1Instituto Nacional de Tecnología Agropecuaria, Argentina, 2INTA, 3Instituto Nacional de Tecnología Agropecuaria, Argentina, 4Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Argentina. Facultad de Ciencias Veterinarias, Universidad Nacional de La Pampa, Argentina, 5Facultad de Ciencias Veterinarias Universidad Nacional de La Pampa, Argentina., 6Clemson University
3:15 p.m. PSV-B-16  Correlation Between Plasma, Uterine, and Vaginal Cytokine Concentrations in Postpartum Beef Cows Prior to Artificial Insemination
Kyle J. Hickman-Brown 1, Molly S. Smith 1, Brooke E. McAnally 1, Ramiro V. Oliveira 1, Gabriela Dalmaso 1, Ky G. Pohler 1, Rebecca K. Poole 1
1Texas A&M University

3:15 p.m. PSV-B-17  Effect of Dietary Supplementation with Vitamins/minerals And/or Energy on Fetoplacental Vascularity in Crossbred Angus Heifers
Bethania J. Davila Ruiz 1, Carl R. Dahlen 1, Jennifer L. Hurlbert 1, Friederike Baumgaertner 1, Kerri A. Bochantin 1, Ana Clara B. Menezes 1, Wellison Jarles J. Da Silva Diniz 2, James D. Kirsch 1, Pawel P. Borowicz 1, Sebastian Canovas 3, Larry P. Reynolds 1
1North Dakota State University, 2Auburn University, 3Universidad de Murcia

3:15 p.m. PSV-B-19  Effect of Phi-chrome on Beef Cattle Feedlot Performance in Commercial Conditions in Mexico
Milton Gorocica 1, Aaron Meza 1, Eduardo Martinez 1, Jorge Hidalgo 2
1Phibro Animal Health Corporation, Guadalajara, JA 44130, Mexico, 2University of Georgia

3:15 p.m. PSV-B-20  Effect of Physically Effective Neutral Detergent Fiber, and Undigested Neutral Detergent Fiber on Eating Behavior, Ruminal Ph, Ruminal Motility, and Total Tract Permeability for Finishing Cattle
Murillo C. Pereira 1, Aniele B. Franceschi 2, Katharine M. Wood 3, Wenzhu Yang 4, Karen A. Beauchemin 5, Timothy A. McAllister 4, Greg B. Penner 6
1Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada S7N 5A8, 2São Paulo State University (UNESP), College of Technology and Agricultural Sciences, 3University of Guelph, 4Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, 5Agriculture and Agri-Food Canada, 6Department of Animal and Poultry Science, University of Saskatchewan

3:15 p.m. PSV-B-18  Effect of Puberty Induction on Embryonic Loss in Precocious Nellore Heifers
Marcelo baggio 1, José paulo P. R. Barroso 1, Leticia Carolina Bortolanza Soares 1, Josiane F Lages 1, Joel G Oliveira Junior 1, Mariana Jeronymo 1, Natasha B Petrenko 1, Evandro Maia M. Ferreira 1, Alexandre Vaz Pires 1
1ASAS

3:15 p.m. PSV-B-21  Genome-wide Analysis of Sheep Artificially or Naturally Infected with Gastrointestinal Nematodes
Jacob W. Thorne 1, Reid Redden 2, Scott A. Bowdridge 3, Gabrielle M. Becker 1, Morgan R. Stegemiller 4, Brenda M. Murdoch 1
1University of Idaho, 2Texas A&M AgriLife Extension, 3West Virginia University, 4Department of Animal, Veterinary, and Food Sciences, University of Idaho
Small Ruminant
Chair: Raluca G. Mateescu, University of Florida; Christian Posbergh, Montana State University
4:15 PM - 5:35 PM
207 A/B

4:15 p.m. Small Ruminant Introduction

4:20 p.m. 370 Effects of the Vasoactive Intestinal Polypeptide (VIP) for the Efficient Ruminant Product
Md Golam Kafi Afrose Mia 1, Emma Hawley 2, Mustapha Yusuf 2, Glenn Dorsam 2, Kendall C. Swanson 2
1Department of Animal Science, North Dakota State University, 2North Dakota State University

4:35 p.m. 373 Growth Performance, Efficiency of Dietary Net Energy Utilization, and Carcass Traits of Lambs Supplemented Encapsulated Butyric Acid and Zinc Abruptly Transitioned to a Finishing Diet
Forest L. Francis 1, Thiago Lauro Maia Ribeiro 1, Erin R. Gubbels 1, Doug LaFleur 2, Jerilyn Hergenreder 2, Zachary K. Smith 1
1South Dakota State University, 2Kemin Industries Inc.

4:50 p.m. 371 Influence of Breeding Season Lameness on Reproductive Performance in Meat Goat Does
Richard Browning 1, Ahmad Alghamdi 1, Maria L. Leite-Browning 1
1Tennessee State University

5:05 p.m. 372 Selecting Goats for Juniper Consumption Increases Pentobarbital-induced Sleep Time
John Walker 1, Brian Shoemake 2, Danilo G. Quadros 3, Jacob W. Thorne 3, Noah Cahill 2
1Texas A&M AgriLife Research and Extension Center, 2Texas A&M University, 3Texas A&M AgriLife Research

5:20 p.m. 374 The Effects of Zinc Sulfate on the in vitro Feed Digestibility in White-tailed Deer
Reese J. Thibodeaux 1, Phil M. Urso 1, Stanley F. Kelley 1, Marcy M. Beverly 1, Chris R. Stewart 1
1Sam Houston State University

Poster Session VI
5:15 PM - 6:15 PM
Exhibit Hall A

5:15 p.m. PSVI-14 Effect of Morphometric Traits upon Social Hierarchy of Dorper Rams from Northern Mexico
MA ANGELES DE SANTIAGO 1, Francisco Gerardo Véliz-Deras 2, Andrea González-Tavizón 2, Pablo I. Sifuentes Lamont 1, Cesar Alberto Meza-Herrera 3, RAFAEL RODRIGUEZ MARTINEZ 1, GERARDO ARELLANO RODRÍGUEZ 1
1UAAAN, 2Universidad Autónoma Agraria Antonio Narro, 3Universidad Autónoma Chapingo
5:15 p.m.  PSVI-17  Effect of Post-ruminal Amino Acid Supply on Organ Mass and Small Intestinal Length in Holstein Bull Calves Fed a Starch-based Milk Replacer
Emily A. Petzel 1, Subash Acharya 1, Eric Bailey 1, Setsabile Shiba 1, Derek W. Brake 1
1University of Missouri

5:15 p.m.  PSVI-18  Effect of Processing Method and Severity for Hybrid Fall Rye on Dry Matter Intake, Ruminal Fermentation, and Apparent Total Tract Nutrient Digestibility in Ruminally Cannulated Beef Heifers
Murillo C. Pereira 1, Jordan A. Johnson 2, Rebecca S. Brattain 3, Herman Wehrle 4, Greg B. Penner 5
1Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada S7N 5A8, 2Government of Saskatchewan, Ministry of Agriculture, 3KWS Cereals USA, LLC., 4KWS CEREALS USA, LLC., 5Department of Animal and Poultry Science, University of Saskatchewan

5:15 p.m.  PSVI-19  Effect of Processing Methods and Inclusion Level of Dried Raw Garlic on in vitro Fermentation Profile and Methane Production in a Corn Silage-based Diet
Juan Vargas 1, Federico Tarnonsky 1, Araceli B. Madero 1, Ignacio Fernandez Marenchino 1, Federico Podversich 1, Wilmer Cuervo 1, Camila Gomez Lopez 1, Tessa M. Schulmeister 1, Nicolas DiLorenzo 2
1University of Florida, 2Department of Animal Sciences, North Florida Research and Education Center (NFREC), University of Florida, Marianna, FL

5:15 p.m.  PSVI-20  Effect of Skin Thickness and Rumen-protected Methionine on Body Temperature of Nelore Cows Keep on Tropical Environment
Cassio Cassal Brauner 1, Matheus Barbosa 2, Vinicius de Souza Izquierdo 3, Jordani Cardoso 2, Fernanda Lopes 4, Marcio Nunes Corrêa 1, Eduardo Schmitt 5
1NUPEEC - UFPel, 2Universidade Federal de Pelotas, 3University of Florida - Range Cattle Research & Education Center, 4ADISSEO LATIN AMERICA ADISSEO BRASIL NUTRIÇÃO ANIMAL LTDA., 5Federal University of Pelotas

5:15 p.m.  PSVI-8  Effect of Social Hierarchy upon Reproductive Traits of Dorper Rams from Northern Mexico
Viridiana Contreras-Villarreal 1, Andrea González-Tavizón 2, Cesar Alberto Meza-Herrera 3, Fernando Arellano-Rodríguez 2, Dalia Ivette Carrillo-Moreno 2, Guadalupe Calderón-Leyva 2, Oscar Ángel-García 2, Francisco Gerardo Véliz-Deras 2
1Universidad Autónoma Agraria Antonio Narro, 2Universidad Autónoma Agraria Antonio Narro, 3Universidad Autónoma Chapingo

5:15 p.m.  PSVI-9  Effect of Supplementing Confined Goats with Cucumis Melo During the Peripartum Period
Leticia Gaytán Alemán 1, Oscar Ángel-García 1, Viridiana Contreras Villarreal 1, Dalia Ivette Carrillo-Moreno 1, Francisco Gerardo Véliz-Deras 1, Guadalupe Calderón-Leyva 1, Alan Sebastian Alvarado Espino 2, Angeles De Santiago Miramontes 2
1Universidad Autónoma Agraria Antonio Narro, 2Universidad Autónoma Agraria Antonio Narro
5:15 p.m.  PSVI-15  Effects of Different Dietary Sources of Lipids for Lactating Ewes
Adrielly S a Silva 1, Paulo cesar G Dias Junior 1, Matheus Carlis 2, Nathalia R Ackermann 1, Thamires U Sturion 1, Terezinha T Souza 1, Janaina S S. Biava 1, Evandro Maia M. Ferreira 1, Daniel M M. Polizel 1, Bruno leda Cappelloza 1, Alexandre Vaz Pires 1
1ASAS, 2FZEA-USP

5:15 p.m.  PSVI-11  Effects of Levels of Minerals of a Natural Source of Brackish Water and Nacl on Digestion and Ruminal Methane Emission by Different Breeds of Goats and Hair Sheep
Luana Ribeiro 1, Ryszard Puchala 2, Arthur L. Goetsch 2
1American Institute for Goat Research, Langston University, 2Langston University

5:15 p.m.  PSVI-1  Effects of Rumen-protected Methionine on Reproduction and Body Temperature of Nelore Cows in Hot and Humid Environments
Vinicius de Souza Izquierdo 1, Fernanda Lopes 2, Bernardo Da Silva Menezes 3, Edgard Gonçalves Malaguet 4, Marcio Nunes Corrêa 4, Philipe Moriel 5, Cassio Cassal Brauner 4, Eduardo Schmitt 6
1University of Florida - Range Cattle Research & Education Center, 2ADISSEO LATIN AMERICA ADISSEO BRASIL NUTRIÇÃO ANIMAL LTDA., 3NUPEC, 4NUPEC - UFPel, 5University of Florida, 6Federal University of Pelotas

5:15 p.m.  PSVI-12  Ghrelin Plasm Concentrations Are Greater in High- vs Low-rfi Hampshire Male Lambs Within a Transient Surge of Secretion Just Before a Scheduled Meal Feeding
José G. Pérez-Álvarez 1, José A. Martínez-Quintana 2, Francisco J. Jahuey-Martínez 1, Agustín Corral-Luna 2, Joel Domínguez-Viveros 1, Ana A. Sifuentes-Rincón 3, Felipe A. Rodríguez-Almeida 2
1Universidad Autónoma de Chihuahua, Facultad de Zootecnia y Ecología, 2Universidad Autónoma de Chihuahua, 32Instituto Politécnico Nacional-Centro de Biotecnología Genómica

5:15 p.m.  PSVI-21  Including Gene-edited Individuals in Genetic Evaluations Can Bias the Estimated Breeding Values of Their Progeny
Leticia P. Sanglard 1, Garret See 1, Matthew L. Spangler 2
1University of Nebraska - Lincoln, 2University of Nebraska-Lincoln

5:15 p.m.  PSVI-13  Nutritional Supplementation with Leftover Food of Dairy Cows upon Reproductive Response of Goats
MA ANGELES DE SANTIAGO 1, MARIA G. MACHADO 1, Dalia Ivette Carrillo-Moreno 2, Fernando Arellano-Rodríguez 2, JUAN M. GUILLEN 1, Viridiana Contrearas 1, Francisco Gerardo Vélez-Deras 2
1UAAAN, 2Universidad Autónoma Agraria Antonio Narro

5:15 p.m.  PSVI-7  Postmortem in vitro Culture of Cells from Visceral Organs Stored at 4°C in Small Ruminants
Mahipal Singh 1, Arunachala Shiv Kumar Reddy Kutagulla 1
1Fort Valley State University
5:15 p.m.  PSVI-6  Predicting Fecal Composition Using near Infrared Spectroscopy (NIRS): Expanding the Calibration to Include Grazing Beef Samples
Jenilee F. Peters 1, Mary Lou Swift 2, Greg B. Penner 3, Bart Lardner 4, Timothy A. McAllister 5, Gabriel O. Ribeiro 3
1Trouw Nutrition / University of Saskatchewan, 2Trouw Nutrition, 3Department of Animal and Poultry Science, University of Saskatchewan, 4University of Saskatchewan, 5Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada

5:15 p.m.  PSVI-10  Preliminary Evaluation of Small Ruminant Production Systems in Mississippi and the Southern US
Lindsey N. Dearborn 1, Leyla Rios 2, Rocky Lemus 3, Laura Downey 4, Gina Rico-Mendez 5, Joshua Maples 6, Michael Pesato 7, Jessica Graves 8
1Animal and Dairy Sciences Department, Mississippi State University, 2Mississippi State University, 3Department of Plant and Soil Sciences, Mississippi State University, 4School of Human Sciences, 5Social Science Research Center, 6Department of Agricultural Economics, 7College of Veterinary Medicine. Mississippi State University, 8University Academic Advising Center

5:15 p.m.  PSVI-2  Relationship of Sperm Plasma Serine Protease Inhibitor (SERPINA5) and Dystroglycan (DAG1) Proteins with Dairy Bull Fertility
Saulo Menegatti Zoca 1, Julie Walker 1, Adalaine Kline 2, Taylor N. Andrews 3, Jerica JJ Rich 4, Kaitlin M. Epperson 5, Jessica N. Nora Drum 6, M. Sofia Ortega 8, George A. Perry 7
1South Dakota State University, 2South Dakota State University Department of Animal Science, Brookings, SD, 3New Mexico State University, 4College of Agriculture, Arkansas State University, 5Department of Animal Science, Texas A&M University, College Station, TX, 6University of Missouri, 7Texas A&M AgriLife Research, Overton, TX

5:15 p.m.  PSVI-3  Reproductive Performance of Gilts Enrolled in the Batch Farrowing Ovugel Program Compared with Normal Breeding on Estrus Expression
Mike E. Johnston 1, Christopher L. Anderson 1, Mark E. Swanson 1, Stephen K. Webel 1
1United Animal Health

5:15 p.m.  PSVI-4  Serum Metabolomic Characterization of Birth Weight and Neonatal Nutrient Restriction on Piglet Growth and Development
Michael O. Wellington 1, Lucas A. Rodrigues 2, Melissa A. Quinn 3, Josiane C. Panisson 1, David P. Ferguson 3, Daniel A. Columbus 1
1Prairie Swine Centre, Inc., 2Prairie Swine Center, 3Michigan State University

5:15 p.m.  PSVI-16  The Essential Oil of Arnica Montana Positively Modulates the Fatty Acid Profile of Lamb Meat
Paulo Cesar G Dias 1, Evandro Maia M. Ferreira 1, Isabela Jorge Santos 1, Matheus Carlis 2, Ana Carolina S Vicente 1, Adrielly S a Silva 1, Rhaissas G Assis 1, Jamily H Comelli 1, Janaina S S. Biava 1, Leticia Carolina Bortolanza Soares 1, Alexandre Vaz Pires 1
1ASAS, 2FZEA-USP

5:15 p.m.  PSVI-5  Treatment of Flunixin Meglumine and Prostaglandin E2 Had No Effect on Corpora Lutea of Beef Cows
Jamie E. Larson 1, Tate Johnson 1, Rebecca M. Swanson 1, Riley D. Messman 1, Caleb O. Lemley 1
1Mississippi State University
Tuesday, June 28, 2022

Poster Session VII
7:00 AM - 8:00 AM
Exhibit Hall A

7:00 a.m.  PSVII-1  Effect of the Sequence of Feeding Forage and Concentrate-based Diets on Dry Matter Intake and Average Daily Gain of Growing Angus Bulls
Carlee M. Salisbury 1, Abigail R. Rathert-Williams 2, Amanda Holder 3, David Lalman 1, Andrew P. Foote 1
1Oklahoma State University, 2University of Missouri, 3College of the Ozarks

7:00 a.m.  PSVII-2  Effects of Feeding a Starch or Pectin Supplement on Ruminal Parameters and Gas Production of Grazing Young Bulls
Andressa S. Scholz Berca 1, Abmael Da Silva Cardoso 2, Natalia Vilas Boas Fonseca 3, Ricardo Reis 4, Luis O. Tedeschi 5
1Department of Animal Science/Texas A&M University, 2University of Florida, 3Universidade Estadual Paulista - Unesp, 4Sao Paulo State University (UNESP), 5Texas A&M University

7:00 a.m.  PSVII-3  Effects of Feeding Direct-fed Microbials on Digestibility and Rumen Fermentation Characteristics of Finishing Bos Indicus Cattle
Bruno Garcia de Carvalho Dias 1, Murilo A. Meschiatti 2, Bárbara Brixner 1, Aleksander Almeida 1, Bruno I. Cappellozza 3, Giuseppe Copani 3, Paulo Ferreira 4, Oscar Queiroz 3, Flavio Santos 1
1Department of Animal Science, “Luiz de Queiroz” College of Agriculture, University of São Paulo (USP), Piracicaba, SP, 2Inpasa Brasil, 3Chr. Hansen A/S, 4Chr Hansen BR

7:00 a.m.  PSVII-4  Effects of Feeding Direct-fed Microbials on Performance and Carcass Traits of Finishing Bos Indicus Cattle
Bruno Garcia de Carvalho Dias 1, Murilo A. Meschiatti 2, Bárbara Brixner 1, Aleksander Almeida 1, Bruno I. Cappellozza 3, Giuseppe Copani 3, Paulo Ferreira 4, Oscar Queiroz 3, Flavio Santos 1
1Department of Animal Science, “Luiz de Queiroz” College of Agriculture, University of São Paulo (USP), Piracicaba, SP, 2Inpasa Brasil, 3Chr. Hansen A/S, 4Chr Hansen BR

7:00 a.m.  PSVII-5  Effects of Hops Treatment on Nitrogen Retention of Composted Poultry Litter and Subsequent Rumen Fermentation
YAMICELA CASTILLO-CASTILLO 1, Robin C. Anderson 2, MICHAEL E. HUME 3, DAVID J. NISBET 3, MICHAEL Flythe 3, CLAUDIO ARZOLA-ALVAREZ 1, Claudio Angulo-Montoya 4, Jaime Salinas-Chavira 5, FRANCISCO CASTILLO-RANGEL 1, MONSERRATH FELIX-PORTILLO 1, MARINA ONTIVEROS-MAGADAN 6, Oscar Ruiz-Barrera 7
1UNIVERSIDAD AUTONOMA DE CHIHUAHUA, 2USDA/ARS, Southern Plains Agricultural Research Center’s Food & Feed Safety Research Unit, 3USDA/ARS, 4Universidad Autonoma de Sinaloa, 5Universidad Autonoma de Tamaulipas, 6UNIVERSIDAD AUTONOMA DE CIUDAD JUAREZ, 7Universidad Autónoma de Chihuahua

7:00 a.m.  PSVII-6  Effects of Hydroponically Sprouted Cereal Grains on Feedlot Performance, Blood Serum Chemistry, and Apparent Nutrient Digestibility in Beef Cattle
Emmalee E. Slack 1, Duane E. Tidemann 1, Shawn Jenkins 1
1HydroGreen Global
7:00 a.m. PSVII-7  Effects of Minerals Source Supplementation on Performance and Carcass Production by Feedlot Cattle
Maria B. Niehues 1, Alexandre Perdigão 2, Isabelle Errobidarte de Matos 3, Daniel I. C. G. Gouvêa 4, Victor Valério de Carvalho 5, Tiago S. S. Acero 6, Luis Tamassia 7, Cyntia L. L. Martins 4, Mário B. D. B. Arrigoni 4, Vinicius N. Gouvea 8
1 São Paulo State University, Botucatu, Brazil, 2 DSM Nutritional Products Brazil, 3 Federal University of Mato Grosso do Sul, Campo Grande, Brazil, 4 São Paulo State University (Unesp), FMVZ Botucatu, SP, Brazil, 5 dsf, 6 DSM Nutritional Products, 7 DSM Nutritional Products Switzerland, 8 Texas A&M AgriLife Research

7:00 a.m. PSVII-8  Effects of Processed Saccharina Latissima and Ascophyllum Nodosum on Ruminal Fermentation and Methane Production in Continuous Culture
Ashley W. Driemel 1, Lauren M. Baker 1, Miriam A. Snider 1, Kevin Posman 2, Charlotte Quigley 2, Nichole N. Price 2, Sabrina L. Greenwood 1
1 University of Vermont, 2 Bigelow Laboratory for Ocean Sciences

7:00 a.m. PSVII-9  Effects of Roughage Level on Animal behavior in Nelore Cattle Receiving a High Concentrate Diet Under Tropical Conditions
Filipe Mendonca 1, Rodrigo Goulart 2, Matheus C. Garcia 1, Pedro Veiga Rodrigues Paulino 3, Paulo Bortoleto Junior 2, Gustavo Seronni 4, Julio C. Balieiro 5, Dante Lanna 6
1 Luiz de Queiroz College of Agriculture, 2 FZEA-USP, 3 Cargill, 4 ESALQ-USP, 5 FZEA-USP, 6 University of São Paulo

7:00 a.m. PSVII-10  Effects of Supplementing a Standardized Plant-derived Feed Additive Containing Isoquinoline Alkaloids on Rumen Lesions in Feedlot Cattle
Rogelio Gómez Alarcón 1, Rafael Ruiz Arellano 1, Alejandro Piña 2, Gabriela Castellanos 3, Cleverson De Souza 3, Lucas Rigolin 3, Santiago Bas 3, Jorge Gómez Madrid 2, Flavio Ribeiro 4
1 Rogan Soluciones Ganaderas, 2 GABSA, 3 Phytobiotics, 4 Phytobiotics North America, LLC

7:00 a.m. PSVII-11  Effects of Wheat Cultivars on Chemical Composition, in vitro Digestibility, and Rumen Fermentation Characteristic of Sprouted Grains
seungmin Jeong 1, youngho joo 2, myeongji seo 2, seongshin Lee 3, samchrul kim 2
1 Gyeongsang National University, 2 Gyongsang National University, 3 Korean National Institute of Animal Science

7:00 a.m. PSVII-12  Efficacy of Formic Acid as a Silage Preservative on Dairy Cattle Performance
Guilherme L. Menezes 1, Alan Oliveira 2, Lúcio Gonçalves 2, Luiz Ferraretto 1, João Dorea 1, Diogo Jayme 2
1 University of Wisconsin, 2 Federal University of Minas Gerais

7:00 a.m. PSVII-13  Evaluation of Ginkgo Leaf as a Feed for Ruminants by Using in vitro Gas Production Technique
Lin Wang 1, Miao Lin 1, Yuwei Yang 1, Dalin Liu 1, Guoqi Zhao 1
1 Yangzhou University

7:00 a.m. PSVII-14  Evaluation of Precision Feeding on Production Efficiency Responses in Finishing Beef Cattle
Warren C. Rusche 1, Zachary K. Smith 1, Santana Hanson 1
1 South Dakota State University
7:00 a.m.  PSVII-15  Evaluation of the Effects of Hormonal Implants on Efficiency, and Water Footprint of Feedlot Steers
Tio Brody 1, Arturo Macias Franco 2, Aghata Silva 3, Mozart A. Fonseca 1
1University of Nevada, Reno, 2University of Nevada Reno, 3Auburn University

7:00 a.m.  PSVII-16  Evaluation of the Population Profile of Methanogenic Microorganisms in Animals Treated with the Additive Fator P
Luis Ferreira 1, Andre Daurea 1, Wellington Araújo 1, Lauriston Bertelli 1, Felipe Nishimura 2, Ana Saltoratto 2
1Premix Company, 2Ribeirão Preto University

7:00 a.m.  PSVII-17  Feeding Behavior of Beef Feedlot Yearling Steers Offered Finishing Diets with Direct Fed Microbial Mixtures
Alejandra M. Lopez 1, Jhones O. Sarturi 1, Darren D. H. Henry 2, Bradley J. Johnson 1, Kaliu Gabriel Scaranto Silva 1, Kaue Tonelli Nardi 1, Camron J. Rush 1, Barbara Rodrigues 1, Sarah Peters 1
1Texas Tech University, 2University of Georgia

7:00 a.m.  PSVII-18  Feeding Behavior of Beef Steers Consuming Finishing Diets with an Added Nutritional Packet in a Calf-fed System
Camron J. Rush 1, Jhones O. Sarturi 1, Darren D. H. Henry 2, Francine M. Messias Ciriaco 2, Nelson O. Huerta-Leidenz 1, Alejandra M. Lopez 1, Kaliu Gabriel Scaranto Silva 1, Kaue Tonelli Nardi 1, Sarah Peters 1, Mikala Di Manna 3, Andrea M. Osorio-Doblado 2, Kymberly Coello 2, Angel A. Quijada 2, Jordan Hinds 1, Yasmim Saes 1, Whitney L. Crossland 1
1Texas Tech University, 2University of Georgia, 3New Mexico State University

7:00 a.m.  PSVII-19  Feeding Behavior of Feedlot Beef Steers Consuming Finishing Diets with an Added Nutritional Packet
Kaue Tonelli Nardi 1, Kaliu Gabriel Scaranto Silva 1, Jhones O. Sarturi 1, Darren D. H. Henry 2, Whitney L. Crossland 1, Luis O. Tedeschi 3, Egleu D. M Mendes 4
1Texas Tech University, 2University of Georgia, 3Texas A&M University, 4Texas A&M University / Department of Animal Science

7:00 a.m.  PSVII-20  Hepatic Mrna Expression of Nutrient and Mitochondrial Energy Metabolism Genes in Beef Steers Selected for Low or High Residual Feed Intake
Godstime A. Taiwo 1, Modoluwamu Idowu 1, Andres A. Pech-Cervantes 2, Zaira M. Estrada-Reyes 3, Ibukun M. Ogunade 1
1West Virginia University, 2Fort Valley State University, 3North Carolina A & T University

CSAS Graduate Student Oral Competition: MS
Chair: Obioha Durunna, Department of Applied Research, Lakeland College Vermilion
8:00 AM - 11:45 AM
302A

8:00 a.m.  154  Supplementation of Late Gestation Metabolizable Energy in Beef Cows Reduces Mobilization of Body Reserves Prepartum
Emily Croft 1, Koryn S. Hare 2, Katharine M. Wood 1, Greg B. Penner 3, Michael A. Steele 4
1University of Guelph, 2Department of Animal Bioscience, University of Guelph, 3Department of Animal and Poultry Science, University of Saskatchewan, 4Department of Animal Biosciences, University of Guelph
8:15 a.m. 153 Phenotypic Selection of Efficient Beef Cows and Differences in Digestive Physiology
Justin J. Delver 1, John J. McKinnon 2, Herbert A. Lardner 2, Gabriel O. Ribeiro 2, Greg B. Penner 2
1University of Saskatchewan, 2Department of Animal and Poultry Science, University of Saskatchewan

8:30 a.m. 147 The Effects of Creatine Monohydrate and Guanidinoacetic Acid Supplementation on Bovine Satellite Cells
Erika P. Eckhardt 1, WonSeob Kim 1, Jongkyoo Kim 1
1Michigan State University

8:45 a.m. 148 Effect of Increasing Sodium Sulfate in Water on Intake on Ruminal Fermentation and the in vitro Effect of Bismuth Subsalicylate on Gas Production and NDF Digestibility
Mikaela G. Evans 1, Gabriel O. Ribeiro 2, Darren D. H. Henry 3, Jordan A. Johnson 4, John R. Campbell 5, Cheryl Waldner 6, Greg B. Penner 2
1Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan, 2Department of Animal and Poultry Science, University of Saskatchewan, 3University of Georgia, 4Government of Saskatchewan, Ministry of Agriculture, 5Department of Large Animal Clinical Sciences, Western College of Veterinary Medicine, University of Saskatchewan, 6Western College of Veterinary Medicine, University of Saskatchewan

9:00 a.m. 159 Effect of Dry or Temper Rolling of High or Low Protein Wheat and Its Impact on Rumen Parameters, Liver Abscesses, and Growth Performance of Feedlot Cattle
Amanda C. Meadows 1, Stephanie A. Terry 2, Greg B. Penner 3, Tim A. McAllister 4, Gabriel O. Ribeiro 3
1University of Saskatchewan, 2Agriculture and Agri-Food Canada, 3Department of Animal and Poultry Science, University of Saskatchewan, 4Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada

9:15 a.m. 155 Effect of Forage Inclusion Strategy on Finishing Beef Cattle Performance and Liver Abscesses
Tyen J. Paterson 1, Greg B. Penner 2, Herbert A. Lardner 2, Emma Stephens 3, Robert J. Gruninger 4, Wenzhu Yang 4, Karen A. Beauchemin 3, Tim A. McAllister 4, Gabriel O. Ribeiro 2
1University of Saskatchewan, 2Department of Animal and Poultry Science, University of Saskatchewan, 3Agriculture and Agri-Food Canada, 4Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada

9:30 a.m. 158 Predicting Intake and Digestibility of Nutrients in Beef Cattle Fed High Forage Diets Using near Infrared Spectroscopy (NIRS) of Feces and Internal Markers
Jenilee F. Peters 1, Mary Lou Swift 2, Greg B. Penner 3, Herbert A. Lardner 3, Timothy A. McAllister 4, Gabriel O. Ribeiro 3
1Trouw Nutrition / University of Saskatchewan, 2Trouw Nutrition, 3Department of Animal and Poultry Science, University of Saskatchewan, 4Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada

9:45 a.m. CSAS Graduate Student Oral Competition: MS Break
10:00 a.m. 152 Effect of Continuous or Intermittent Feeding of Ergot Contaminated Grain in a Mash or Pelleted Form on the Performance of Backgrounding Beef Steers
1University of Saskatchewan, 2Biological Sciences Department, University of Lethbridge, 3Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, 4Department of Veterinary Biomedical Sciences, University of Saskatchewan, 5Department of Animal and Poultry Science, University of Saskatchewan

10:15 a.m. 157 Comparison of Reproductive and Early Growth Performance of an F1 USDA Prime Yield Grade One Carcass Clone Sire and an Industry-leading Purebred Sire in the Beef X Dairy Production System
Katylyn J. Richardson 1, David G. Lust 1, Ty E. Lawrence 1, Tommy L. Perkins 1
1West Texas A&M University

10:30 a.m. 156 Effect of Increasing Levels of Ergot Alkaloids in the Diet of Feedlot Cattle
Jenna M. Sarich 1, Kim Stanford 2, Karen S. Schwartzkopf-Genswein 3, Tim A. McAllister 3, Barry R. Blakley 4, Greg B. Penner 5, Gabriel O. Ribeiro 5
1University of Saskatchewan, 2Biological Sciences Department, University of Lethbridge, 3Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, 4Department of Veterinary Biomedical Sciences, University of Saskatchewan, 5Department of Animal and Poultry Science, University of Saskatchewan

10:45 a.m. 146 Effect of Short-term Nutritional Increase 30 Days Prior to Artificial Insemination on ADG and Reproductive Efficiency in Beef Heifer Development Systems
Landon F. Tadich 1, Rick N. Funston 1
1University of Nebraska, West Central Research and Extension Center, North Platte 69101

11:00 a.m. 150 Effects of Annual and Perennial Forage Systems on Forage Biomass and Quality, Grazing Animal Performance, and Enteric Methane Emissions
Megan Wasden 1, Gabriel O. Ribeiro 2, Daalkhaijav Damiran 1, Bill Biligetu 4, Kathy A. Larson 4, Herbert A. Lardner 2
1Department of Animal and Poultry Science, University of Saskatchewan, Saskatoon, SK, Canada, S7N 5A8, 2Department of Animal and Poultry Science, University of Saskatchewan, 3Department of Plant Sciences, University of Saskatchewan, 4Department of Agricultural and Resource Economics, University of Saskatchewan

11:15 a.m. 149 Differences in Gene Expression Following Natural Exposure to Gastrointestinal Parasites Between Sheep Selected for High Innate Responses and High Antibody-mediated Adaptive Immune Responses
Olivia B. Willoughby 1, Emma Borkowski 2, Samantha Dixon 3, Samla M F Cunha 1, Victoria Asselstine 3, Andrew S. Perergrine 2, Paula I. Menzies 4, Niel A. Karrow 1, Angela Cánovas 1
1Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, 50 Stone Rd E, N1G 1Y2, ON, Canada, 2Ontario Veterinary College, University of Guelph, Department of Pathobiology, 3Department of Animal Biosciences, University of Guelph, 4Ontario Veterinary College, University of Guelph, Department of Population Medicine
11:30 a.m. 151 Energy Metabolism, Digestive and Absorptive Capacity, and Fecal Microbiome of Nursery Piglets Selected for Feed Efficiency
Yujia Wu 1, Paula Azevedo 2, Shunshun Jin 3, Xiaoya Zhao 3, Haoxiang Xu 2, Huaigang lei 4, Argenis Rodas-Gonzalez 5, Charles Martin Nyachoti 5, chengbo Yang 6
1The University of Manitoba, Department of Animal Science, 2Department of Animal Science, University of Manitoba, 3University of manitoba, Department of Animal Science, 4Topigs Norsvin Canada Inc., 5University of Manitoba, 6Department of Animal Science, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada

Beef Species and Ruminant Nutrition Symposium III:
Implications of Gut Health in Ruminant Nutrition
Chair: Sara Trojan, Peak Beef Cattle Nutrition and Management Consulting LLC
8:00 AM - 12:00 PM
Ballroom B

8:00 a.m. Beef Species and Ruminant Nutrition Symposium III Introduction

8:05 a.m. 99 Why Should the Beef Industry Be Concerned About Gut Health?
Greg B. Penner 1
1Department of Animal and Poultry Science, University of Saskatchewan

8:45 a.m. 100 Gut Inflammation: Fanning Non-specific Flames That Impact Health and Performance
Megan A. Abeyta 1, Lance H. Baumgard 1, Todd R. Callaway 2
1Iowa State University, 2University of Georgia

9:25 a.m. 97 Immunology and the Gut: The Key to Animal Health
Chris Chase 1
1South Dakota State University

10:05 a.m. Beef Species and Ruminant Nutrition Symposium III Break

10:20 a.m. 98 Gut Microbiome: Implications on Gut Health
T.G. Nagaraja 1
1Kansas State University College of Veterinary Medicine

11:00 a.m. 101 Intestinal Barrier Dysfunction: Causes and Metabolic Consequences
Sara K. Kvidera 1
1Elanco Animal Health

11:40 a.m. Beef Species and Ruminant Nutrition Symposium III Q&A
Poster Session VIII
8:15 AM - 9:15 AM
Exhibit Hall A

8:15 a.m.  PSVIII-9  Effect of Garlic Extracts on Galectin Protein Secretion in St.corix Sheep Blood
SreeNavya Inupala 1, Sowmya Jagana 1, Priyanka Pande 1, MD Rasel Uzzaman 1, Mulumebet Worku 1
1NC A&T State University

8:15 a.m.  PSVIII-1  Hy-d Increases Ca, P and Serum Metabolites Related to Growth in Grazing Animals Receiving a P Deficient Supplement
Fernanda Simões Mudado 1, Alexandre Perdigão 2, Melissa Barreto Silveira 1, Isabelle Errobidarte de Matos 3, Aline Gomes da Silva 3, Henrique Jorge Fernandes 3, Tiago S. S. Acedo 4, Victor Valério de Carvalho 5
1Federal University of Mato Grosso do Sul, 2DSM Nutritional Products Brazil, 3Federal University of Mato Grosso do Sul, Campo Grande, Brazil, 4DSM Nutritional Products, 5dsm-firmenich

8:15 a.m.  PSVIII-2  Hy-d Increases Performance of Grazing Nellore Young Bulls Receiving Protein Supplement in the Growing Phase
Melissa Barreto Silveira 1, Fernanda Simões Mudado 1, Alexandre Perdigão 2, Isabelle Errobidarte de Matos 3, Aline Gomes da Silva 3, Henrique Jorge Fernandes 3, Tiago S. S. Acedo 4, Victor Valério de Carvalho 5
1Federal University of Mato Grosso do Sul, 2DSM Nutritional Products Brazil, 3Federal University of Mato Grosso do Sul, Campo Grande, Brazil, 4DSM Nutritional Products, 5dsm-firmenich

8:15 a.m.  PSVIII-3  Hy-d Increases Performance of Nellore Cattle Finished on Pastures with Protein-energetic Supplement
Diego Magnum Maifrede dos Santos 1, Thomas Henrique Roque da Silva 1, Alexandre Perdigão 2, Isabelle Errobidarte de Matos 3, Aline Gomes da Silva 3, Henrique Jorge Fernandes 3, Tiago S. S. Acedo 5
1Federal University of Mato Grosso do Sul, 2DSM Nutritional Products Brazil, 3Federal University of Mato Grosso do Sul, Campo Grande, Brazil, 4DSM Nutritional Products

8:15 a.m.  PSVIII-4  Impact of Different Forage Allowances During the Middle and Late Thirds of Pregnancy of Nellore Dams Pregnant with Female Calves on Dam Performance
1UNESP / APTA, 2FAZU, 3São Paulo State University, Jaboticabal, Brazil, 4Unesp - FCAV, Jaboticabal, SP, Brazil, 5Montana State University, 6PhD, Teacher FAZU - Faculdades Associadas de Uberaba

8:15 a.m.  PSVIII-5  Impact of Forage Allowance During Mid- to Late-gestation on the Performance of the Cow/calf Pair
William L. L. Souza 1, Luciana Melo Sousa 2, Iorrano A. A. Cidrini 3, German Ramirez-Zamudio 4, Laura Franco Prados 5, Ivanna M. Oliveira 6, Gustavo Rezende Siqueira 5, Flávio Dutra de Resende 5
1São Paulo State University, Jaboticabal, Brazil, 2UNESP / APTA, 3Montana State University, 4Universidade Federal de Lavras, Brazil, 5APTA, 6PhD, Teacher FAZU - Faculdades Associadas de Uberaba
8:15 a.m. PSVIII-6 Impact of Naturally Occurring Water with High Sulfate Concentration on Feed and Water Intake, Growth, and Trace Mineral Status of Beef Cattle
Murillo C. Pereira 1, Catherine M. Lang 2, Dwayne Summach 2, Jordan A. Johnson 3, Greg B. Penner 4
1Department of Animal and Poultry Science, College of Agriculture and Bioresources, University of Saskatchewan, Saskatoon, SK, Canada S7N 5A8, 2Saskatchewan Ministry of Agriculture, 3Government of Saskatchewan, Ministry of Agriculture, 4Department of Animal and Poultry Science, University of Saskatchewan

8:15 a.m. PSVIII-7 Impact of Virginiamycin on Rumen Fermentation and Methane Production in a Lactation Diet
Yun Jiang 1, Brooke Humphrey 2, Miriam Garcia 3
1Kentucky State University, 2Phibro Animal Health Corporations, 3Phibro Animal Health

8:15 a.m. PSVIII-8 Impacts of Phosphorus Intake on Beef Heifer Growth Performance and Conception Rates
Robin A. Cheek 1, Beth B. Kegley 2, Jeremy G. Powell 1, Kirsten A. Midkiff 1, Jana L. Reynolds 1, Benjamin P. Shoulers 1, Haley Hilfiker 3
1University of Arkansas System Division of Agriculture, 2University of Arkansas Division of Agriculture, 3University of Missouri

8:15 a.m. PSVIII-10 In vitro Incubation with a Bacillus-based Direct-fed Microbial Improves Forage Digestibility Parameters
Liyi Pan 1, Karen Harper 2, Bruno I. Cappellozza 3, Giuseppe Copani 3, Oscar Queiroz 3
1University of Queensland, 2The University of Queensland, 3Chr. Hansen A/S

8:15 a.m. PSVIII-11 In vitro Incubation with a Bacillus-based Direct-fed Microbial Improves Starch Digestibility
Liyi Pan 1, Karen Harper 2, Bruno I. Cappellozza 3, Giuseppe Copani 3, Oscar Queiroz 3
1University of Queensland, 2The University of Queensland, 3Chr. Hansen A/S

8:15 a.m. PSVIII-12 Influence of Colostrum Insulin Supplementation on Brush Border Carbohydrase Activity in Neonatal Holstein Bulls
Mustapha Yusuf 1, Koryn S. Hare 2, Michael Nagorske 3, Katharine M. Wood 4, Michael A. Steele 5, Kendall C. Swanson 1
1North Dakota State University, 2Department of Animal Bioscience, University of Guelph, 3The Saskatoon Colostrum Company Ltd., 4University of Guelph, 5Department of Animal Biosciences, University of Guelph

8:15 a.m. PSVIII-13 Influence of Propionibacteria Acidipropionici on Short Chain Fatty Acid and Methane Production in Fistulated Beef Steers
Jonah R. Levenson 1, Roderick Gonzalez Murray 2, Gabriel Garcia 1, Evo Davila 2, Miranda L. Zuvich 1, Ryan J. Gifford 1, ryne haggard 2, Erlene Chek 1, meghan P. Thorndyke 1, Octavio Guimaraes 1, Harrison D. Hallmark 3, Huey Yi Loh 1, Briana V. Tangredi 1, John J. Wagner 1, Terry E. Engle 1, Richard Goodall 4
1Colorado State University, 2researcher, 3Colorado State University, Department of Animal Sciences, 4sponcer
8:15 a.m. PSVIII-14 Investigating Variability of Spent Craft Microbreweries Grains for Classification and Incorporation into Diet Formulation Through Multivariate Analyses
Macy L. Rockwell 1, Arturo Macias Franco 2, Aghata Silva 3, Mozart A. Fonseca 1
1University of Nevada, Reno, 2University of Nevada Reno, 3Auburn University

8:15 a.m. PSVIII-15 Is There Any Relationship Between Metabolize Energy and Fecal Starch in Nelore Cattle Under High Grain Finishing Diets?
Filipe Mendonca 1, Matheus Carlis 2, Matheus C. Garcia 1, Rafael Afonso 3, Joao Leone 3, Rodrigo Goulart 2, Dante Lanna 4
1Luiz de Queiroz College of Agriculture, 2FZEA-USP, 3ESALQ/USP, 4University of São Paulo

8:15 a.m. PSVIII-16 Metagenomic Analyses of Microbial and Carbohydrate-active Enzymes in the Rumen of Holstein Steers Supplemented with Seeds of Pharbitis Nil
Rajaraman Bharanidharan 1, Jun Suk Byun 2, Kyoung Hoon Kim 3
1College of Agriculture and Life Sciences, Seoul National University, 2Graduate School of International Agricultural Technology, Seoul National University, 3Seoul National University

8:15 a.m. PSVIII-21 Modulation of Goat Plasma Proteins Using Different Preparations of Garlic
Sowmya Jagana 1, SreeNavya Inupala 1, Priyanka Pande 1, MD Rasel Uzzaman 1, Mulumebet Worku 1
1NC A&T State University

8:15 a.m. PSVIII-17 Nutrient Digestibility of Beef Steers Consuming Finishing Diets with an Added Nutritional Packet in a Calf-fed System
Camron J. Rush 1, Jhones O. Sarturi 1, Darren D. H. Henry 2, Francine M. Messias Ciriac 2, Nelson O. Huerta-Leidenz 1, Whitney L. Crossland 1, Alejandra M. Lopez 1, Kaliu Gabriel Scaranto Silva 1, Kaue Tonelli Nardi 1, Andrea M. Osorio-Doblado 2, Sarah Peters 1, Mikala Di Manna 3, Jordan Hinds 1, Yasmine Saes 1, Barbara Rodrigues 1, Angel A. Quijada 2, Kymberly Coello 2
1Texas Tech University, 2University of Georgia, 3New Mexico State University

8:15 a.m. PSVIII-18 Nutrient Digestibility of Feedlot Beef Yearling Steers Offered Finishing Diets with Direct Fed Microbial Mixtures
Alejandra M. Lopez 1, Jhones O. Sarturi 1, Darren D. H. Henry 2, Francine M. Messias Ciriac 2, Bradley J. Johnson 1, Kaliu Gabriel Scaranto Silva 1, Kaue Tonelli Nardi 1, Camron J. Rush 1, Barbara Rodrigues 1, Sarah Peters 1, Mikala Di Manna 3
1Texas Tech University, 2University of Georgia, 3New Mexico State University

8:15 a.m. PSVIII-20 Patatin-like Phospholipase Domain-containing Protein 3 Abundance Is Affected by Knockdown of Sterol Regulatory Element-binding Protein 1c but Not of Carbohydrate Response Element Binding Protein
Sophia J. Kendall 1, Heather M. White 1
1University of Wisconsin-Madison

8:15 a.m. PSVIII-19 Predict Indigestible Fiber Fraction of Barley Plant Silage by Using Non-destructive Mid-ir vs Near-ir Spectroscopic Techniques
B. Refat 1, P. Yu 2
1CSAS, ASAS, 2ASAS, CSAS, ADSA
Cell Biology Symposium: Cellular and Molecular Effects of Heat Stress
Chair: Kristen Govoni, Dept. of Animal Science, University of Connecticut; Sarah Potts, University of Maryland Extension
8:30 AM - 11:00 AM
205 A/B

8:30 a.m.   Cell Biology Symposium Introduction

8:35 a.m.  102   Insights Into the Molecular Underpinnings of Disrupted Mammary Development and Function Arising from Late-Gestation Heat Stress
Jimena Laporta ¹
¹University of Wisconsin-Madison

9:20 a.m.  103   Genetic Dissection of Host Response to Heat Stress in Poultry: an “omic” Approach
Huaijun Zhou ¹
¹University of California, Davis

10:05 a.m.  400   Improving Heat Stress Resilience to Reduce the Negative Effects of Pre- and Postnatal Heat Stress in Swine
Jay S. Johnson ¹, Luiz F. Brito ², Christian Maltecca ³, Francesco Tiezzi ⁴
¹USDA-ARS Livestock Behavior Research Unit, ²Purdue University, ³Department of Animal Science, North Carolina State University, Raleigh, USA, ⁴North Carolina State University

10:50 a.m.   Cell Biology Symposium Q&A

Animal Breeding and Genetics: Recent Advances
Chair: Christine Baes, Centre for Genetic Improvement of Livestock, University of Guelph, Ontario, Canada & Institute of Genetics, Vetsuisse Faculty, University of Bern, Bern, Switzerland
8:30 AM - 12:00 PM
301 A/B

8:30 a.m.   Animal Breeding and Genetics: Recent Advances Introduction

8:35 a.m.  41   Awardee Talk: Synergistic Power of Genomic Selection, Assisted Reproductive Technologies, and Gene Editing to Drive Genetic Improvement of Cattle
Maci L. Mueller ¹, Alison L. Van Eenennaam ²
¹University of California, Davis, ²University of California, Davis Department of Animal Science

9:05 a.m.  31   Genotype Concordance Between SNP Chip and Imputed Low-pass Whole-genome Sequence in Beef Cattle
Leticia P. Sanglard ¹, Larry A. Kuehn ², Warren M. Snelling ³, Matthew L. Spangler ⁴
¹University of Nebraska - Lincoln, ²U.S. Meat Animal Research Center, ³USDA, ARS, Roman L Hruska U.S. Meat Animal Research Center, ⁴University of Nebraska-Lincoln
9:20 a.m.  40  The Impact of Sire EBV for Growth and Feed Intake on Pig Activity Level Using Nutrack
Dalton R. Obermier 1, Tom Rathje 2, Ty B. B. Schmidt 3, Benny E. Mote 4
1University of Nebraska - Lincoln, 2DNA Swine Genetics, 3University of Nebraska-Lincoln, 4Department of Animal Science, University of Nebraska – Lincoln

9:50 a.m.  38  Effect of Breed Composition and Genome-wide Association Study on Epidermis Thickness in a Multibreed Angus-brahman Population
Andrea N. Nunez Andrade 1, Aakilah Hernandez 1, Eduardo E. Rodriguez 1, Kaitlyn M. Sarlo Davila 2, Raluca G. Mateescu 1, Eduardo Rodríguez 1
1University of Florida, 2ORISE/NADC

10:05 a.m.  Animal Breeding and Genetics: Recent Advances Break

10:15 a.m.  42  Awardee Talk: Utilizing Genomics to Understand Skeletal and Mammary Development in Pigs
Gary A. Rohrer 1, Hiruni R. Wijesena 1, Brittney N. Keel 1, Warren M. Snelling 2, Clay A. Lents 3

10:45 a.m.  36  Exploring the Statistical Nature of Independent Chromosome Segments
Mary Kate Hollifield 1, Matias Bermann 1, Daniela Lourenco 1, Ignacy Misztal 1
1University of Georgia

11:00 a.m.  39  Genetic Associations Between Feeding Behavior and Economic Interest Traits in Group-housed Broilers
Anderson A. Carvalho Alves 1, Arthur F. Araujo Fernandes 2, Fernando B. Lopes 2, Vivian Breen 2, Rachel Hawken 2, Guilherme J. M. Rosa 3
1Department of Animal and Dairy Sciences, University of Wisconsin - Madison, 2Cobb-Vantress, Inc., 3University of Wisconsin-Madison

11:15 a.m.  33  Genetic Evaluation of Show Jumping Performance in the Irish Sport Horse
Jennifer L. Doyle 1, Alan G. Fahey 1
1University College Dublin

11:30 a.m.  34  A Comparison of International Genetic Evaluations of Show Jumping in Sport Horses
Jennifer L. Doyle 1, Christopher Carroll 1, Alison Corbally 2, Alan G. Fahey 1
1University College Dublin, 2Horse Sport Ireland

11:45 a.m.  37  Associations Among Individual Gilt Birth Weight with Subsequent Weights, Selection Rates, and Age to Reach 135 Kg
Gefferson Silva 1, Carine M. Vier 2, Amanda P. Siqueira 1, Ray Gonsalves 1, Fernanda Almeida 3, Vanderlei Zappani 4, Evandro Beraldin 4, Geraldo C. Alberton 5, Daiane Donin 6, Ning Lu 7, Steve Dritz 2, Uislei A. Orlando 2
1Agroceres PIC, 2PIC North America, 3UFMG, 4Lar Cooperativa Agroindustrial, 5Federal University of Parana (Campus Palotina), 6UFPR, 7PIC China
Comparative Gut Physiology Symposium:
Redefining Gut Barrier Function in Animal Biosciences
Chair: Michael Steele, Department of Animal Biosciences, University of Guelph
8:30 AM - 12:00 PM
206 A/B

8:30 a.m.  Comparative Gut Physiology Symposium Introduction

8:35 a.m.  139  Calcium-sensing Receptor and the Regulation of Nutrient Absorption and Gut Health in Pigs
chengbo Yang 1, Xiaoya Zhao 2
1Department of Animal Science, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada,
2University of manitoba, Department of Animal Science

9:10 a.m.  140  Redefining Gut Barrier Function for Beef and Dairy Cattle
Greg B. Penner 1
1Department of Animal and Poultry Science, University of Saskatchewan

9:45 a.m.  Comparative Gut Physiology Symposium Break

10:00 a.m.  136  Intestinal Barrier Function: Physiological Regulation, Injury, and Repair in Horses and Swine
Anthony T. Blikslager 1
1North Carolina State University College of Veterinary Medicine

10:35 a.m.  138  Age-dependent Intestinal Barrier Repair in Suckling Pigs: A Comparative Model to Improve Neonatal Gastrointestinal Health Across Species
Amanda L. Ziegler 1
1North Carolina State University

11:10 a.m.  137  Standing in the Gap of Neonatal Microbe-host Barrier Function
Douglas Burrin 1, Valeria Melendez Hebib 2
1USDA-ARS Children's Nutrition Research Center, Baylor College of Medicine, 2Baylor College of Medicine

11:45 a.m.  Comparative Gut Physiology Symposium Q&A

Companion Animal Symposium I: Effects of Processing on Nutrients and Nutrition
Chair: Charles Aldrich, Kansas State University
9:30 AM - 12:15 PM
301 C/D

9:30 a.m.  Companion Animal Symposium I: Effects of Processing on Nutrients and Nutrition Introduction

9:45 a.m.  131  Rendering Effects on Pet Food Ingredients
David L. Meeker 1
1North American Renderers Association
10:15 a.m. 129 **Protein and Amino Acid Modifications During Extrusion**
Guido Bosch
1Wageningen University & Research

10:45 a.m. **Companion Animal Symposium I: Effects of Processing on Nutrients and Nutrition Break**

11:00 a.m. 130 **The Raw Truth: Feeding Zoo-Housed Carnivores**
Katherine Kerr 1, Mathew Brooks 2
1Comparative Nutritionist, 2Animals Nutrition Consulting, LLC; NomNomNow, Inc.

11:30 a.m. 399 **Introduction to Freeze Drying**
Jared Ducklow 1, Gerrit Meidl 1
1Parker Freeze Dried

12:00 p.m. **Companion Animal Symposium I: Effects of Processing on Nutrients and Nutrition Discussion**

**Poster Session IX**
12:00 PM - 1:00 PM
Exhibit Hall A

12:00 p.m. PSIX-19 **Characterizing Apical-out Chicken Intestinal Organoids Grown in a Microcavity Culture Plate**
Lorik Tamazian 1, Liang-en Yu 1, Yihang Li 1, Erin E. Connor 1
1University of Delaware

12:00 p.m. PSIX-20 **nrf2 Pathway Mediates Resistance to Weaning Stress-induced Intestinal Injury in Piglets of Different Breeds**
Ying-chao Qin 1, Geng-xiu Zan 1, Su-juan Ding 2, Chun-qi Gao 1, Hui-chao Yan 1, Xiang-feng Kong 2, Xiu-qi Wang 3
1College of Animal Science, South China Agricultural University, 2Hunan Provincial Key Laboratory of Animal Nutritional Physiology and Metabolic Process, 3College of Animal Science, South China Agricultural University

12:00 p.m. PSIX-1 **Predicting Beef Cattle Dry Matter Intake**
Nathan Blake 1, Matthew Walker 1, Ida Holaskova 1, Jason Hubbart 1, Domingo Mata-Padrino 1, Ibukun M. Ogunade 1, Kelsie Sanders 1, Tylor J. Yost 1, Matthew E. Wilson 1
1West Virginia University

12:00 p.m. PSIX-2 **Residual Effect of Narasin on Ruminal Fermentation Characteristics in Steers**
Letícia Carolina Bortolanza Soares 1, Daniel M M. Polizel 1, Marcelo baggio 1, Paulo Cesar G Dias 1, Joel G de Oliveira Junior 1, Gustavo Mendonça 1, Mariana Jeronyms 1, Evandro Maia M. Ferreira 1, Isabela Jorge Santos 1, Natasha B Petrenko 1, Alexandre Vaz Pires 1
1ASAS

12:00 p.m. PSIX-3 **Rumen bacteria Composition Between Pre-weaning and Post-weaning Dairy Calves**
Zhang Xinyu 1, Shengli Li 2
1China agricultural university, 2China Agricultural University
12:00 p.m.  PSIX-4  Rumen Microbial Meta-proteome and Milk Whey Proteome in Holstein Cows Fed with High Starch and Low Fiber Diet
Bharath Mulakala 1, Katherine Smith 2, Miriam A. Snider 3, Mallory Honan 4, Ariel Ayers 1, Sabrina L. Greenwood 3
1The University of Vermont, 2William H. Miner Agricultural Research Institute, 3University of Vermont, 4University of California

12:00 p.m.  PSIX-5  Ruminal Papillae Morphology and Volatile Fatty Acid Profile of Beef Steers Consuming Finishing Diets with an Added Nutritional Packet in a Calf-fed System
Sarah Peters 1, Jhones O. Sarturi 1, Camron J. Rush 1, Luana Felizari 1, Darren D. Henry 1, Nelson O. Huerta-Leidenz 1, Dale R. Woerner 1, Barbara Rodrigues 1, Alejandra M. Lopez 1, Kaliu Gabriel Scaranto Silva 1, Kaue Tonelli Nardi 1, Katherine Wilkes 1
1Texas Tech University

12:00 p.m.  PSIX-6  Ruminal Tissue Morphology of Beef Yearling Steers Offered Finishing Diets with Direct Fed Microbial Mixtures
Alejandra M. Lopez 1, Katherine Wilkes 1, Jhones O. Sarturi 1, Darren D. H. Henry 2, Bradley J. Johnson 1, Kaliu Gabriel Scaranto Silva 1, Camron J. Rush 1, Barbara Rodrigues 1, Sarah Peters 1, Angela Camarillo 1
1Texas Tech University, 2University of Georgia

12:00 p.m.  PSIX-7  Sorghum Silage: Effects of Processing on Performance of Backgrounding Beef Cattle
Leandro O. Abdelhadi 1, Guillermo Mattioli 2, Nicolas DiLorenzo 3
1FCV-UNLP, UF-NFREC, 2Universidad Nacional de La Plata, 3Department of Animal Sciences, North Florida Research and Education Center (NFREC), University of Florida, Marianna, FL

12:00 p.m.  PSIX-8  Supplementing a Natural Citrus Flavonoid Extract (Bioflavex) to Finishing Cattle
Melina Silvero 1, Francisco Crespo 2, Maria del Mar Serra Pesquer 2, Elisa Perez Bayo 2, Igor Fernández Peñarrubia 2, Alejandro Palladino 3, Rodolfo Fattore 3, Rafael A. Palladino 4
1Facultad de Agronomía UBA, 2HealthTech Bio Actives, S.L.U., 3Eurotec Nutrition Argentina, 4CONICET

12:00 p.m.  PSIX-9  The Effect of Endophyte-infected Tall Fescue Seed Consumption on Gut and Satiety Hormones Related to Intake in Holstein Steers
Mindy E. King 1, Hannah M. Herzing 2, Kyle R. McLeod 3, James L. Klotz 4, David L. Harmon 3
1Oklahoma State University, 2University of Kentucky, 3University of Kentucky Department of Animal & Food Sciences, 4Forage-Animal Production Research Unit, USDA-ARS

12:00 p.m.  PSIX-10  The Effect of NDF from Forage Levels on Metabolize Energy Intake and Fecal Starch in Nelore Cattle
Filipe Mendonca 1, Matheus Carls 2, Guilherme Zulim 3, Leonardo Ferreira 3, Joao Ventorin 3, Matheus C. Garcia 1, Paulo Bortoleto Junior 2, Victor Aguiar 3, Dante Lanna 4
1Luiz de Queiroz College of Agriculture, 2FZEA-USP, 3ESALQ/USP, 4University of São Paulo

12:00 p.m.  PSIX-11  The Effect of Probiotic Supplementation on the Alpha Diversity and Proteobacteria Ratio in South African Feedlot Cattle in the Finisher Phase
Dina A. Linde 1, Lindeque du Toit 1, Dirkjan Schokker 2, Este van Marle-Koster 1
1University of Pretoria, 2Wageningen Livestock Research, Wageningen University and Research
12:00 p.m.  PSIX-12  The Effects of Feeding Chromium Propionate to Yearling Steers in a Commercial Feedyard on Growth Performance, Carcass Characteristics and Health
Sara J. Trojan 1, Tony C. Bryant 2, Jenny S. Jennings 3, Darryl Clark 4, Doug LaFleur 5, Landon Canterbury 4, Jerilyn Hergenreder 5
1Peak Beef Cattle Nutrition and Management Consulting LLC, 2Five Rivers Cattle Feeding, 35 Rivers Cattle Feeding, 4Kemin Industries, 5Kemin Industries Inc.

12:00 p.m.  PSIX-13  The Impact of Saccharomyces Cerevisiae Fermentation Product on in-vitro Rumen Fermentation Characteristics, Gas Production, and Ruminal Microbiome Composition
Rafael Mezzomo 1, Zack Burcham 2, meghan P. Thorndyke 3, Huey Yi Loh 3, Briana V. Tangredi 3, Harrison D. Hallmark 2, Ryan J. Gifford 3, Jessica Metcalf 2, Brad Morgan 2, Keith Belk 2, Trevor Tuell 4, Octavio Guimaraes 3, Terry E. Engle 3
1Colorado State University, 2Colorado State University, Department of Animal Sciences, 3Colorado State University, 4Diamond V

12:00 p.m.  PSIX-14  The Influence of Previous Plane of Nutrition on Feedlot Performance, Water Intake and Carcass Characteristics of Beef Steers
Abigail L. Barney 1, Arturo Macias Franco 2, Aghata Silva 3, Felipe Henrique De Moura 1, Mozart A. Fonseca 1
1University of Nevada, Reno, 2University of Nevada Reno, 3Auburn University

12:00 p.m.  PSIX-15  The Influence of Trace Mineral Source on Reproductive Performance in Recipient Multiparous Beef Cows
Tyler A. Thomas 1, Briana V. Tangredi 1, Harrison D. Hallmark 2, meghan P. Thorndyke 1, Octavio Guimaraes 1, Sara Crane 1, Terry E. Engle 1
1Colorado State University, 2Colorado State University, Department of Animal Sciences

12:00 p.m.  PSIX-16  Urine Metabolome and Whole Blood Transcriptome of Beef Steers with Low or High Residual Feed Intake
Godstime A. Taiwo 1, Modoluwamu Idowu 1, Domingo Mata-Padrino 1, James Denvir 2, Ibukun M. Ogunade 1
1West Virginia University, 2Marshall University

12:00 p.m.  PSIX-17  Use of mycotoxin Deactivator Increases Productive Performance by Feedlot Cattle Fed a Natural Contaminated Diet
Daniel I. C. G. Gouvêa 1, Maria B. Niehues 2, Isabelle Errobidarte de Matos 3, Alexandre Perdigão 4, Victor Valério de Carvalho 5, Tiago S. S. Acedo 6, Tyler Turner 7, Cyntia L. L. Martins 1, Mário B. D. B. Arrigoni 1
1São Paulo State University (Unesp), FMVZ Botucatu, SP, Brazil, 2São Paulo State University, Botucatu, Brazil, 3Federal University of Mato Grosso do Sul, Campo Grande, Brazil, 4DSM Nutritional Products Brazil, 5dsm-firmenich, 6DSM Nutritional Products, 7DSM Nutritional Products Switzerland

12:00 p.m.  PSIX-18  Use of Feed Additives to Improve the Recovery of Unweaned Calves After Transportation
Sonia Marti 1, Marta Blanch 2, Marta Terre 1, Maria Devant 1
1IRTA, Ruminant Production, 2Lucta S.A.
ASAS-ASN Symposium: Animal–Sourced Foods for Global Health
Chair: Anna Dilger, University of Illinois at Urbana-Champaign; Ryan Dilger, University of Illinois Urbana-Champaign
1:00 PM - 4:00 PM
Ballroom B

1:00 p.m.  ASAS-ASN Symposium Introduction

1:05 p.m.  68 Nutritional Importance of Animal-Sourced Foods in a Healthy Diet
Teresa A. Davis
1USDA/ARS Children’s Nutrition Research Center, Baylor College of Medicine

1:35 p.m.  67 Importance of Animal-Sourced Foods and Barriers To Their Adoption Globally
Adegbola T. Adesogan
1Food Systems Institute, University of Florida

2:05 p.m.  ASAS-ASN Symposium Break

2:15 p.m.  66 Environmental Impacts of Animal-Sourced Foods: Historical Trends and Future Opportunities
Robin R. White
1Virginia Tech School of Animal Sciences

2:45 p.m.  65 The Role of Livestock as Up-cyclers of Food By-products and Waste
Kim H. Ominski
1, Tim A. McAllister
2, Kim Stanford
3, Genet Mengistu
1, Kebebe E. Gunte
1, Marcos Marcos
1, Karin Wittenberg
1, Faith Omonijo
4, Jaime White
5, Getahun Legesse
6
1University of Manitoba, 2Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, 3Biological Sciences Department, University of Lethbridge, 4McGill University, 5Loop Resources, 6Manitoba Agriculture

3:15 p.m.  69 Animal Sourced Foods Role in Sustainable Nutrition
Greg Thoma
1, Daesoo Kim
1
1University of Arkansas

3:45 p.m.  ASAS-ASN Symposium Conclusion

Nonruminant Nutrition II
Chair: Jason Woodworth, Kansas State University
1:00 PM - 4:00 PM
302A

1:00 p.m.  Nonruminant Nutrition II Introduction

1:05 p.m.  273 Awardee Talk: A Perspective on Calcium and Phosphorus Nutrition: Where We Are and the Opportunities Ahead
Olayiwola Adeola
1
1Purdue University
Evaluation of In-barn Feeder Management Prior to Marketing to Reduce Feed Cost and Improve Carcass Yield and Economic Return
Hilario M. Cordoba, Joel M. DeRouchey, Robert D. Goodband, Mike D. Tokach, Jason C. Woodworth, Jordan T. Gebhardt
1Kansas State University

Effect of Functional Amino Acid Supplementation in Low and Normal Birth Weight Pigs on Performance and Immune Status During Subsequent Salmonella Challenge
Lucas A. Rodrigues, Josiane C. Panisson, Agbee L. Kpogo, John K. Khun Kyaw Htoo, Andrew G. Van Kessel, Daniel A. Columbus
1Prairie Swine Center, 2Prairie Swine Centre, 3University of Saskatchewan, 4Evonik, 5Prairie Swine Centre, Inc.

Effects of a Probiotic Bacillus Strain on Ileal Digestibility of Crude Protein, Starch, Energy and Fat and Total Tract Digestibility of Energy and Dietary Fiber in Diets Fed to Weanling Pigs
Maryane Sespere Faria de Oliveira, Guillermo Jimenez, Hans H. Stein
1University of Illinois at Urbana-Champaign, 2Rubinum, S.A.

Effects of Different Watering Options on Standardized Ileal Digestibility of Amino Acids and Net Energy in Diets Fed to Growing Pigs
Su A Lee, Diego A. Rodriguez, Hans H. Stein
1University of Illinois at Urbana-Champaign

Nonruminant Nutrition II Break

Effects of Feeding Levels in Early Gestation on PIC Camborough Sows and Litter Performance
Ning Lu, Jorge Estrada, Andrea Hanson, Carine M. Vier, Jose A. Soto, Gustavo Silva, Beau Peterson, Eric Parr, Michael Welsch, Steve Dritz, Ron Navales, Wayne R. Cast, Uislei A. Orlando
1PIC China, 2Carthage Veterinary Service, 3Carthage Vet Services, 4PIC North America, 5Ajinomoto Heartland, 6Iowa State University, 7Carthage Innovative Swine Solutions, 8Genus PIC

Effects of Increasing Lactation Dietary Energy Concentration by Adding Fat During the Summer Period on Sow and Litter Performance
Jorge Estrada, Carine M. Vier, Andrea Hanson, Ning Lu, Julia A. Calderon Diaz, Denise Van De Stroet, Luis E. Zaragoza, Beau Peterson, Eric Parr, Steve Dritz, Ron Navales, Wayne R. Cast, Uislei A. Orlando
1Carthage Veterinary Service, 2PIC North America, 3Carthage Vet Services, 4PIC China, 5PIC Europe, 6Genus PIC, 7Carthage Innovative Swine Solutions

Effects of Lactobacillus Fermentate on Modulation of Mucosa-associated Microbiota in Relation to Intestinal Health of Nursery Pigs Challenged with F18+ Escherichia coli
Marcos Elias Elias Duarte, Xiangyi Xu, Sung Woo Kim
1North Carolina State University, 2NC State University
3:30 p.m. 265 Effects of Non-starch Polysaccharide Degrading Enzymes + Lysophospholipids in Feeds with Varied ME Contents on Growth Performance and Nutrient Utilization of Pigs from 25 to 75 Kg BW
Jonathan T. Baker ¹, Sung Woo Kim ²
¹North Carolina State University, ²NC State University

3:45 p.m. 275 Effects of Reduced Metabolizable Energy by Reducing Fat Supplementation on Growth Performance and Intestinal Health of Nursery Pigs
Jonathan T. Baker ¹, Marcos Elias Elias Duarte ¹, Sung Woo Kim ²
¹North Carolina State University, ²NC State University

Nonruminant Nutrition I
Chair: Jean-Yves Dourmad, INRAE
1:00 PM - 5:15 PM
Ballroom A

1:00 p.m. Nonruminant Nutrition I Introduction

1:05 p.m. 249 Awardee Talk: Swine Nutrient Requirements: Past, Present, and Future
Phillip S. Miller ¹
¹University of Nebraska-Lincoln

1:35 p.m. 251 A Combination of Dietary Isoleucine and Valine Above Recommended Levels Improves the Growth and Alters the Metabolites Profile in Pigs Fed with Very Low Protein Diets
Parniyan Goodarzi ¹, Mohammad Habibi ¹, Matthew W. Gorton ¹, Firoozeh Tarkesh ¹, Katherine Walsh ¹, Mallory Fuhrig ¹, Adel Pezeshki ¹
¹Department of Animal and Food Sciences, Oklahoma State University, Stillwater, OK 74078

1:50 p.m. 258 A Survey of Added Vitamin Levels in Diets Utilized in the U.S. Swine Industry
Jamil Faccin ¹, Mike D. Tokach ¹, Robert D. Goodband ¹, Joel M. DeRouchey ¹, Jason C. Woodworth ¹, Jordan T. Gebhardt ¹
¹Kansas State University

2:05 p.m. 250 Effect of Dietary Zinc and Copper Supplements on Digestibility of Minerals in Growing Pigs
Mohamed Ali Ketata ³, Frédéric Guay ², Marie-Pierre Létourneau-Montminy ²
³Animal sciences department- Faculty of Agriculture and Food Sciences- Laval university (FSAA), ²Université Laval

2:20 p.m. 256 Effect of Functional Amino Acid Supplementation in Salmonella-challenged Weaned Pigs Fed Either Animal- or Plant-based Nursery Diets
Lucas A. Rodrigues ¹, Josiane C. Panisson ², Andrew G. Van Kessel ³, Daniel A. Columbus ⁴
¹Prairie Swine Center, ²Prairie Swine Centre, ³University of Saskatchewan, ⁴Prairie Swine Centre, Inc.
2:35 p.m. 262 Effect of Isoleucine and Added Valine on Performance, and Gut Microbiota Composition of Pigs Fed with Very Low Protein Diets
Parniyan Goodarzi 1, Caitlyn M. M. Wileman 1, Mohammad Habibi 1, Katherine Walsh 1, Julia Sutton 1, Cedrick n. Shili 1, Jianmin Chai 2, Jiangchao Zhao 2, Adel Pezeshki 1
1Department of Animal and Food Sciences, Oklahoma State University, Stillwater, OK 74078, 2Department of Animal Science, University of Arkansas, Fayetteville, AR, 72701

2:50 p.m. 257 Effect of the Essential Amino Acid-nitrogen to Total Nitrogen Ratio on Lysine Requirement for Nitrogen Retention in Growing Pigs
Carley M. Camire 1, Lucas A. Rodrigues 2, Josiane C. Panisson 3, Anna Kate K. Shoveller 4, Daniel A. Columbus 5
1University of Saskatchewan, 2Prairie Swine Center, 3Prairie Swine Centre, 4University of Guelph, 5Carthage Innovative Swine Solutions

3:05 p.m. Nonruminant Nutrition I Break

3:15 p.m. 254 Effects of Increasing Daily Dietary Standardized Ileal Digestible Lysine Intake of Gilts and Sows During Day 35-to-112 of Gestation on Reproductive Performance
Ning Lu 1, Carine M. Vier 2, Jose A. Soto 3, Danielle Wilson-Wells 2, Denise Van De Stroet 2, Luis E. Zaragoza 4, Beau Peterson 5, Eric Parr 5, Steve Dritz 2, Ron Navales 4, Wayne R. Cast 2, Uislei A. Orlando 2
1PIC China, 2PIC North America, 3Ajinomoto Heartland, 4Genus PIC, 5Carthage Innovative Swine Solutions

3:30 p.m. 261 Effects of Soy Protein Concentrate Replacing Animal Protein Supplements on Modulation of Mucosa-associated Microbiota in Relation to Intestinal Health of Nursery Pigs
Zixiao Deng 1, Marcos Elias Elias Duarte 2, Sung Woo Kim 3
1PhD Student, 2North Carolina State University, 3NC State University

3:45 p.m. 263 Efficacy and Safety of a Novel Source of 25-hydroxycholecalciferol in Performance and Tissue Deposition in Growing Pigs
Jorge L. Sandoval 1, Diego E. Ventura 1, Orlando B. Fiallos 2, Brian L. Anderson 3, Chris Sparks 4, Jessica D. Starkey 1, Charles W. Starkey 3
1Department of Poultry Science, Auburn University, 2Poultry Science, Auburn University, 3Auburn University, 4Huvepharma

4:00 p.m. 252 Efficiency of Utilization of Methionine for Weight Gain in Weaning Pigs Is Not Affected by Methionine Source: A Meta-analysis
Aline Remus 1, Vinicius Souza 2, Dolores I. Batnon-Alavo 3, Friedrich Rouffineau 3, Ermias Kebreab 4, Candido Pomar 5
1Agriculture and Agri-Food Canada, 2University of California, Davis, 3Adisseo France SAS, 4UC Davis, 5AAFC

4:15 p.m. 259 Impact of Reducing Dietary Protein with Supplementation of 8 Essential Amino Acids and Functional Roles of Supplemental His or Glu on Growth Performance and Carcass Traits of Finishing Pigs
Marcos Elias Elias Duarte 1, Zixiao Deng 2, Jonathan T. Baker 1, Sung Woo Kim 3
1North Carolina State University, 2PhD Student, 3NC State University
4:30 p.m. 255 Leucine Supplementation During Continuous Feeding Enhances Lean Growth in a Preterm Piglet Model
Erin A. Posey 1, Agus Suryawan 2, Hanh Nguyen 2, Barbara Stoll 2, Christina Sciarrillo 1, Caitlin Vonderohe 2, Doug Burrin 2, Marta Fiorotto 2, Teresa A. Davis 2
1USDA/ARS Children's Nutrition Research Center, Department of Pediatrics, Baylor College of Medicine, 2USDA/ARS Children's Nutrition Research Center, Baylor College of Medicine

4:45 p.m. 260 The Effect of Different Bones and Analytical Methods on Assessment of Bone Mineralization Response to Dietary P, Phytase, and Vitamin D in Finishing Pigs
Hadley Williams 1, Jordan T. Gebhardt 1, Mike D. Tokach 1, Jason C. Woodworth 1, Joel M. DeRouchey 1, Robert D. Goodband 1, Jon R. Bergstrom 2, Chad W. Hastad 3, Zach Post 3, Michael Rahe 4, Christopher Siepker 4, Panchan Sitthicharoenchai 4, Steve Ensley 1
1Kansas State University, 2DSM, 3New Fashion Pork, 4Iowa State University

5:00 p.m. 253 The Effect of Increasing Standardized Ileal Digestible Methionine Intake on Whole-body Nitrogen Retention of Gilts During Late Gestation
Cristhiam J. Munoz Alfonso 1, John K. Khun Kyaw Htoo 2, Lee-Anne Huber 1
1University of Guelph, 2Evonik

Poster Session X-A
1:15 PM - 2:30 PM
Exhibit Hall A

1:15 p.m. PSX-A-3 Characterization of Short-season Hybrid Corn Stover and Barley Greenfeed Components Through in vitro Digestibility and Methane Production
Rachel E. Carey 1, Gabriel O. Ribeiro 2, Timothy A. McAllister 3, Greg B. Penner 2
1University of Saskatchewan, 2Department of Animal and Poultry Science, University of Saskatchewan, 3Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada

1:15 p.m. PSX-A-2 Effects of Dietary Crude Protein Level and Corn Grain Processing on Whole-body Urea Kinetics and in-vitro Urea Secretion into the Rumen of Sheep
Kaitlin Burns 1, Greg B. Penner 2, Timothy Mutsvangwa 2
1University of Saskatchewan, 2Department of Animal and Poultry Science, University of Saskatchewan

1:15 p.m. PSX-A-4 Effects of Dietary Protein Content and Crystalline Amino Acid Supplementation Patterns on Intestinal Bacteria and Their Metabolites in Weaned Pigs Raised Under Different Sanitary Conditions
Jinyoung Lee 1, John K. Khun Kyaw Htoo 2, Martina Kluenemann 3, Caroline González-Vega 3, Charles Martin Nyachoti 1
1University of Manitoba, 2Evonik, 3Evonik Operations GmbH

1:15 p.m. PSX-A-5 Effects of High- and Low-fiber Diets on Growth Performance and Intestinal Oxidative Stress in Growing-finishing Pigs
1University of manitoba, Department of Animal Science, 2University of manitoba, 3Topigs Norsvin Canada Inc., 4Department of Animal Science, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada
1:15 p.m.  PSX-A-6  **Energy and Nutrient Digestibility in Hybrid Rye Ground to Two Particle Sizes and Fed Without or with Multicarbohydrase Supplementation to Growing Pigs**  
Jichen Song 1, Charles Martin Nyachoti 1, Claus Hinrich Heuer 2, Jinyoung Lee 1  
1University of Manitoba, 2KWS Lochow GmbH

1:15 p.m.  PSX-A-1  **Impacts of Undigestible NDF and Grain Source in Feedlot Steers on Performance, Feeding Behavior, and Ruminal Ph**  
Amber L. Zupan 1, Katharine M. Wood 1, Greg B. Penner 2, Michael A. Steele 3, Ira B. Mandell 1, Megan Van Schaik 4  
1University of Guelph, 2Department of Animal and Poultry Science, University of Saskatchewan, 3Department of Animal Biosciences, University of Guelph, 4OMAFRA

1:15 p.m.  PSX-A-7  **The Effect of Chronic Maternal Lipopolysaccharide Exposure During Late Gestation on Offspring Muscle Development**  
Erin Bryan 1, Nick Bode 2, Dani Shirey 2, Xuenan Chen 2, Ryan N. Dilger 3, Anna Dilger 4  
1Purina, 2University of Illinois, 3University of Illinois Urbana-Champaign, 4University of Illinois at Urbana-Champaign

1:15 p.m.  PSX-A-8  **Updating Pre-existing Genetic Evaluations System to Evaluate High-throughput Data in Purebred and Crossbred Beef Cattle**  
Kristin Lee 1, Jasper Munro 2, Ricardo V. Ventura 3, Flavio S. Schenkel 4, Gordon Vander Voort 2, Angela Cânovas 4  
1University of Guelph, 2AgSights, 3University of Sao Paulo, 4Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, 50 Stone Rd E, N1G 1Y2, ON, Canada

**Poster Session X-B**  
1:30 PM - 2:30 PM  
Exhibit Hall A

1:30 p.m.  PSX-B-9  **A Nanotechnology Base Immunity Measurement (D2Dx) Compared with Total Serum Protein Concentration Using Neonatal Holstein Bull Calves**  
David P. Casper 1  
1Casper's Calf Ranch

1:30 p.m.  PSX-B-18  **Can a Smartphone Be Used for Daily Field Measurements?**  
Bruno Biagioli 1, Lucas de Souza 2, Illys De Sousa 3  
1UNESP, 2Undergraduate Student, 3Graduate Student

1:30 p.m.  PSX-B-10  **Characterization and Comparison of the Bovine Nasal Microbiome to Exposure of Persistently Infected Bovine Viral Diarrhea Virus**  
Hunter M. Usdrowski 1, Jeremy G. Powell 2, Jianmin Chai 1, Bin Zuo 1, Jana L. Reynolds 2, Benjamin P. Shoulders 2, Beth B. Kegley 3, Jiangchao Zhao 1  
1Department of Animal Science, University of Arkansas, Fayetteville, AR, 72701, 2University of Arkansas System Division of Agriculture, 3University of Arkansas Division of Agriculture
1:30 p.m. PSX-B-11  Classification Performance of Multinomial Logistic Regression for Identifying Resistance, Resilience, and Susceptibility to Gastrointestinal Nematode Infections in Sheep
Luara Freitas 1, Rodrigo Savegnago 2, Anderson A. Carvalho Alves 3, Ricardo Costa 4, Guilherme J. M. Rosa 5, Claudia Paz 6
1University of Sao Paulo - University of Wisconsin-Madison, 2Michigan State University, 3Department of Animal and Dairy Sciences, University of Wisconsin - Madison, 4Sao Paulo Agency of Agribusiness and Technology, 5University of Wisconsin-Madison, 6Animal Science Institute

1:30 p.m. PSX-B-12  Effect of Locust Bean Gum on Gene Expression in Cow Blood
Bharath Mulakala 1, Mulumebet Worku 2
1The University of Vermont, 2NC A&T State University

1:30 p.m. PSX-B-13  Effect of Nutragen Supplementation on Incidence of Bovine Respiratory Disease, Weight Gain and Culling Rate in Feedlot Receiving Cattle
Gustavo Sueldo 1, Brooke Humphrey 2, Elbio Bressan 3, Timothy Buisker 4
1Agro Sin Frontera SA, 2Phibro Animal Health Corporations, 3Phibro Animal Health, 4Smart Data Science Solutions

1:30 p.m. PSX-B-14  Effects of Adding Protected Benzoic Acid on Growth Performance, Diarrhea, and Inflammation in Weaned Pigs Challenged with Escherichia coli F18
Jesus A. Acosta Camargo 1, Deana Hancock 2, Juxing Chen 1, Mercedes Vazquez 3
1Novus International Inc., 2Novus International, 3Novus International, Inc

1:30 p.m. PSX-B-16  Effects of Bacillus Subtilis Subsp. Subtilis Strain ATCC PTA-125135 Supplementation on Performance and Digestibility in Weaned Pigs
Lucas A. Krueger 1, David Spangler 1, Rod Hall 1, Eric Weaver 2
1Agri-King, Inc., 2South Dakota State University

1:30 p.m. PSX-B-15  Effects of Different Combinations of Selenium-enrich Total Mixed Ration on Growth Performance, Slaughter Performance and Antioxidant Performance of Weaned Lambs
Xiaofei Chen 1, Yunfen zhu 1, Yong QU 1, Jiqian XIANG 1, Junhui Xie 1, guogui Wang 1, Rong li 1, Dejun Tan 1, Jin Ma 1, xingen lei 1
1Enshi Autonomous Prefecture Academy of Agricultural Sciences

1:30 p.m. PSX-B-17  Effects of Enzymatic and Microbial Supplements on Shedding of E. coli and Salmonella During the Pre-harvest Finishing Period in Growing Lambs
Lucas A. Krueger 1, Aimee Hafla 1, David Spangler 1
1Agri-King, Inc.

1:30 p.m. PSX-B-21  Equine Embryo Viability Based on Morphokinetics
Sydney L. Hickerson 1, Katelyn J. Richardson 1, Tommy L. Perkins 1, Russell Killingsworth 2, Cara W. Wessells Wells 3, Gregg Veneklasen 4, Noah P. Jesko 1
1West Texas A&M University, 2Shamrock Veterinary Hospital Inc., 3EMGenisys, Inc., 4Timber Creek Veterinary Hospital
1:30 p.m. PSX-B-19  Producers’ Perception of Utilization of Reproductive Technologies in Small Cattle Herds
Paige Williams ¹
¹Tarleton State University

1:30 p.m. PSX-B-20  Survey of Reproductive Management Practices for Beef Cow-calf Producers in VA
Nicholas W. Dias ¹, Stefania Pancini ¹, Guillermo Goncherenko ², Vitor R G. Mercadante ³
¹Virginia Tech, ²Department of Animal and Poultry Sciences, Virginia Tech, ³Virginia Tech - School of Animal Sciences, Large Animal Clinical Sciences

Animal Breeding and Genetics Symposium I: New Insights on Artificial Intelligence Applied to Precision Animal Breeding - Sponsored by DNA Genetics
Chair: Gota Morota, School of Animal Sciences, Virginia Polytechnic Institute and State University
1:30 PM - 4:00 PM
301 A/B

1:30 p.m.  Animal Breeding and Genetics Symposium I Introduction

1:35 p.m.  17 Invited Speaker Dr. Isabel Condotta
Isabella C. F. S. Condotta ¹
¹University of Illinois at Urbana-Champaign

2:05 p.m.  18 Invited Speaker Dr. Suresh Neethirajan
Suresh Neethirajan ¹
¹Wageningen University & Research

2:35 p.m.  Animal Breeding and Genetics Symposium I Break

2:35 p.m.  19 How Can Artificial Intelligence Accelerate Phenotyping Efforts in Animal Breeding?
Gota Morota ¹, Dong Ha ², James Chen ²
¹School of Animal Sciences, Virginia Polytechnic Institute and State University, ²Virginia Tech

3:15 p.m.  20 New Insights on Data Integration and Artificial Intelligence to Predict Primiparous Lactation Curves Capturing Genotype-by-environment Interactions
Fan Zhang ¹, Kent Weigel ², Victor E. Cabrera ²
¹University of Wisconsin Madison, ²University of Wisconsin Madison

3:45 p.m.  Animal Breeding and Genetics Symposium I Q&A

CSAS Symposium I: Increasing Nutrient Utilization of Feedstuffs for Growing-finishing Pigs
Chair: Candido Pomar, AAFC
1:30 PM - 5:00 PM
206 A/B

1:30 p.m.  CSAS Symposium I Introduction
1:35 p.m.  168  **Evaluation and Improvement of the Nutritional Value of Cereal and Pulse Grains for Swine**  
Ruurd T. Zijlstra ¹, Felina Tan ¹, E. Beltranena ¹, Charles Martin Nyachoti ²  
¹University of Alberta, ²University of Manitoba

2:10 p.m.  169  **Evaluation and Improvement of the Nutritional Value of Co-products for Swine**  
Charles Martin Nyachoti ¹, Jinyoung Lee ¹, Ruurd T. Zijlstra ²  
¹University of Manitoba, ²University of Alberta

2:45 p.m.  170  **Improving Nutrient Value of Soybean Meal Using Characterized Novel Microbial Fermentation**  
Julang Li ¹, Nadeem Akhtar ¹, Nanshan Qi ¹, Elijah Kiarie ¹  
¹University of Guelph

3:20 p.m.  **CSAS Symposium I Break**

3:35 p.m.  166  **A Comparison of Key Methodologies Used to Quantify Protein Quality in Mammals: Ileal Digestibility, Indicator Amino Acid Oxidation, and in vitro Digestibility**  
Cara L. Cargo-Froom ¹, Daniel A. Columbus ², Elijah Kiarie ¹, Christopher Marinangeli ³, Anna Kate K. Shoveller ¹  
¹University of Guelph, ²Prairie Swine Centre, Inc., ³Pulse Canada

4:10 p.m.  167  **Monomodular and Multi-functional Processive Endocellulases for Improving Fibre Utilization and Reducing Environmental Footprint in Pigs**  
Ming Z. Fan ¹, Laurence Cheng ¹, Min Wang ¹, Jiali Chen ¹, Wenyi Fan ¹, Weijun Wang ²  
¹University of Guelph, ²Canadian Food Inspection Agency Ontario Operation

4:45 p.m.  **CSAS Symposium I Q&A**

**Young Scholar Award Talks I**  
Chair: Joel Caton, North Dakota State University  
1:45 PM - 3:20 PM  
201

1:45 p.m.  **Young Scholar Award Talks I Introduction**

1:50 p.m.  35  **Young Scholar Award Talk: Computing Strategies for National Beef Cattle Evaluations**  
Matias Bermann ¹, Daniela Lourenco ¹, Ignacy Misztal ¹  
¹University of Georgia

2:20 p.m.  388  **Young Scholar Award Talk: Increasing Efficiency of Finishing Beef Production: Optimizing Starch Digestion, Improving Flaking Quality, and Reducing Methane Emissions**  
Ronald J. Trotta ¹  
¹University of Kentucky
2:50 p.m.  78  Young Scholar Award Talk: How Advances in Animal Efficiency and Management Have Affected Beef's Water Intensity Across the United States: 1991 Compared To 2019
Sarah C. Klopatek ¹, James W. Oltjen ²
¹JBS, ²University of California, Davis

Extension Education Symposium: Importance and Practices of Interaction with Producers and Industry for Land-grant Animal Science Faculty
Chair: Jack Whittier, University of Nebraska
1:45 PM - 3:45 PM
205 A/B

1:45 p.m.  180  Importance and Practices of Interaction with Producers and Industry for Land-grant Animal Science Faculty: How Are These Practices Developed and Implemented?
Jack C. Whittier ¹, Ivan Rush ¹, David Lalman ², Allison M. Meyer ³, Kim K. Mullenix ⁴
¹University of Nebraska, ²Oklahoma State University, ³University of Missouri, ⁴Auburn University

2:00 p.m.  182  Invited Speaker Ivan Rush
Ivan Rush ¹
¹University of Nebraska

2:15 p.m.  181  Invited Speaker Dave Lalman
David Lalman ¹
¹Oklahoma State University

2:30 p.m.  183  Invited Speaker Allison Meyer
Allison M. Meyer ¹
¹University of Missouri

2:45 p.m.  184  Invited Speaker Greg Highfill
Greg Highfill ¹
¹Oklahoma State University

3:00 p.m.  Extension Education Symposium Discussion

Beef Species
Chair: Sara Trojan, Peak Beef Cattle Nutrition and Management Consulting LLC
1:45 PM - 4:45 PM
209 A/B

1:45 p.m.  Beef Species Introduction

1:50 p.m.  87  Awardee Talk: Frequency of Energy Supplementation Modulates Growth, Reproduction, Immune Function, and Fetal Programming in Beef Cattle
Philipe Moriel ¹
¹University of Florida
2:20 p.m.  82 Genetic Correlations Underlying the Thermotolerance – Production Complex in Beef Cattle
Raluca G. Mateescu 1, Fernanda M. Rezende 1, Kaitlyn M. Sarlo Davila 2, Andrea N. Nunez Andrade 1, Aakilah Hernandez 1, Pascal Oltenãcu 1
1University of Florida, 2ORISE/NADC

2:35 p.m.  80 Effects of Prenatal Stress on Beef Steer Development
Kasey A. Elder 1, Rachel Fernandez 2, Rachel Dunn 1, Kiana Green 1, John F. Odhiambo 1, Derrick J. Coble 3
1Florida A & M University, 2Division of Agricultural & Food Sciences, Florida A&M University, Tallahassee, FL 32307, 3North Carolina A&T State University

2:50 p.m.  79 Effects of Nutrient Restriction During Late Gestation of the First Parity on Cow and Calf Performance During the Second Lactation
Shelby L. Davies 1, Colby A. Redifer 2, Abigail R. Rathert-Williams 2, Allison M. Meyer 2
1Division of Animal Sciences, University of Missouri, 2University of Missouri

3:05 p.m.  Beef Species Break

3:15 p.m.  84 Awardee Talk: Managing Reproduction: A Key to Profitability
Les Anderson 1
1University of Kentucky

3:45 p.m.  86 Effects of Hurricane-related Prenatal Stress on Postnatal Growth and Development of Steers and Heifers in a Limited Resource Beef Cow-calf System
John F. Odhiambo 1, Kasey A. Elder 1, Rachel Fernandez 2, Rachel Dunn 1, Kiana Green 1, Derrick J. Coble 3
1Florida A & M University, 2Division of Agricultural & Food Sciences, Florida A&M University, Tallahassee, FL 32307, 3North Carolina A&T State University

4:00 p.m.  81 Effects of Hurricane-related Stress During Gestation on Eplacement Heifer (Bos Taurus) Development in a Limited-resource Beef Cow-calf System
Rachel Fernandez 1, Kasey A. Elder 2, John F. Odhiambo 2, Kiana Green 2, Rachel Dunn 2, Derrick J. Coble 3
1Division of Agricultural & Food Sciences, Florida A&M University, Tallahassee, FL 32307, 2Florida A & M University, 3North Carolina A&T State University

4:15 p.m.  83 Impacts of Heifer Post-weaning Intake Classification on Performance Measurements of Lactating and Non-lactating Two-, Five- and Eight-year-old Angus Beef Females
Krista Wellnitz-Eiseman 1, Cory Parsons 2, Julia Dafoe 3, Samuel Wyffels 2, Darrin L. Boss 3, Timothy DelCurto 1, Megan L. Van Emon 4
1Montana State University, 2Northern Agriculture Research Center, 3Northern Agriculture Research Center, Montana State University, 4Fort Keogh Ag Experiment Station
4:30 p.m.  85  Automated Walk-over Weighing System: Methods to Track Daily Body Mass and Growth in Grazing Steers
Ira L. Parsons 1, Brandi B. Karisch 2, Stephen L. Webb 3, Mike Proctor 4, Amanda E. Stone 5, Garrett Street 6
1South Dakota State University West River Research and Extension, Department of Animal Science, 2Mississippi State University, 3Natural Resources Institute, Texas A&M University, 4Noble Research Institute, 5Mississippi State University, Department of Animal and Dairy Science, 6Mississippi State University, Dept. Wildlife, Fisheries and Aquaculture

Companion Animal I
Chair: Amanda Dainton, Freshpet
1:45 PM - 5:00 PM
301 C/D

1:45 p.m.  Companion Animal I Introduction

1:50 p.m.  109  Effects of a Novel Dental Chew on the Oral Health Outcomes and Malodor of Adult Dogs
Kelly M. Sieja 1, Patricia Massae Oba 2, Amy Schauwecker 3, Teodora Hristova 1, Stephanie Keating 1, Amy Somrak 1, Kelly S. Swanson 4
1University of Illinois, 2University of Illinois Urbana-Champaign, 3PetSmart, 4University of Illinois at Urbana-Champaign

2:05 p.m.  110  Evaluation of High-protein Diets Differing in Protein Source in Healthy Adult Dogs
Kelly M. Sieja 1, Patricia Massae Oba 2, Janelle Kelly 3, Kelly S. Swanson 4
1University of Illinois, 2University of Illinois Urbana-Champaign, 3Champion Petfoods, 4University of Illinois at Urbana-Champaign

2:20 p.m.  104  Standardized Amino Acid Digestibility of Three Formats of Freeze-dried Dog Foods Using the Precision-fed Cecrectomized Rooster Assay
Patricia Massae Oba 1, Pamela L. Utterback 2, Carl M. Parsons 2, James Templeman 3, Kelly S. Swanson 2
1University of Illinois Urbana-Champaign, 2University of Illinois at Urbana-Champaign, 3University of Guelph

2:35 p.m.  106  Minimum Methionine Requirement in Adult Cats Using the Indicator Amino Acid Oxidation Technique
Julia Guazzelli Pezzali 1, Jocelyn G. Lambie 2, Anna Kate K. Shoveller 2
1University of Guelph, 2University of Guelph

2:50 p.m.  105  Effect of a Yeast Product on Palatability, Fecal Microbiota, and Blood Values of Adult Cats
Ching-Yen Lin 1, Matt Panasevich 1, Leighann Daristotle 1, Nolan Frantz 2
1Blue Buffalo, 2Blue Buffalo Company
3:05 p.m.  107  **Restricted Feeding and Weight Loss Positively Change Fecal Microbiota Populations of Obese Dogs**
Patricia Massae Oba ¹, Darcia Kostiuk ², Janelle Kelly ³, Kelly S. Swanson ⁴
¹University of Illinois Urbana-Champaign, ²Champion Pet Foods LP, Morinville, Alberta, Canada, ³Champion Petfoods, ⁴University of Illinois at Urbana-Champaign

3:20 p.m.  **Companion Animal I Break**

3:30 p.m.  108  **Citrus Oil Extract Potentiates the Antifungal Efficacy of Whey Protein Fermentate Against Aspergillus Flavus in Semi-moist Pet Treats for Dogs**
Samuel Kiprotich ¹
¹Kansas State University

3:45 p.m.  112  **Determining the Required Length of Adaptation and Fecal Collection Periods for In-home Digestibility Testing of Cat Foods**
E. Bos ¹, W.H. Hendriks ³, Guido Bosch ¹, B. Beerda ¹
¹Wageningen University & Research

4:00 p.m.  111  **Organic Matter Disappearance and Production of Short- and Branched-chain Fatty Acids from Whole Soybeans and Selected Fiber Sources Used in Pet Foods by a Canine in vitro Fermentation Model**
Hee Seong S. Kim ¹, Charles G. Aldrich ¹
¹Kansas State University

4:15 p.m.  115  **Effects of Probiotic and Heat-killed Probiotic Supplementation on Systemic Biomarkers of Oxidative Stress and Inflammation and Fermentative End Products of Adult Cats**
Sergio Miranda de Souza Junior ¹, Fei He ¹, Maria R C de Godoy ², Gary M. Davenport ³
¹University of Illinois at Urbana Champaign, ²University of Illinois at Urbana-Champaign, ³Archer Daniels Midland Company

4:30 p.m.  114  **Effects of Dietary Cameline Oil Supplementation on Inflammatory and Oxidative Markers, Transepidermal Water Loss, and Skin and Coat Health Parameters in Healthy Adult Dogs**
Taylor Richards ¹, Scarlett Burron ¹, Caitlin E. Grant ², Keely Patterson ¹, Luciano Trevizan ³, Debbie Minikhiem ⁴, Wendy Pearson ¹, Anna Kate K. Shoveller ⁴
¹Department of Animal Biosciences, University of Guelph, ²Department of Clinical Studies, Ontario Veterinary College, University of Guelph, ³Departamento de Zootecnia, Universidade Federal do Rio Grande do Sul, ⁴University of Guelph

4:45 p.m.  113  **Immunological Effects of Ganoderma Lucidum Supplementation in Canine Nutrition**
Emanuela Kayser ¹, Fei He ¹, Luis M.G. M. Osorio ², Maria R C de Godoy ³
¹University of Illinois at Urbana-Champaign, ²Illuma Alliance, ³University of Illinois at Urbana-Champaign
Forages and Pastures I
Chair: Chad Page, Utah State University
2:00 PM - 3:05 PM
207 A/B

2:00 p.m.  Forages and Pastures I Introduction

2:05 p.m.  188  Comparison of Nutritive Value Parameters to Normalized Difference Vegetation Index by Means of Unmanned Aerial Vehicle
Sarah M. Montgomery-Williams 1, Brandi B. Karisch 1, Joby Czarnecki 1
1Mississippi State University

2:20 p.m.  185  Evaluation of the Chemical Composition of Intermediate Wheatgrass (Thinopyrum Intermedium) Regrowth for Potential Fall Grazing of Beef Cattle
Patrick Le Heiget 1, Emma J. J. McGeough 1, Douglas J. Cattani 1
1University of Manitoba

2:35 p.m.  187  Body Performance of Beef Steers Swathgrazing Oat Monoculture or Forage-blends During Winter Months
Obioha N. Durunna 1, Oluwatobi Oyedeji 1, Carien Vandenbrog 2, Deanna Krys 2, Herbert A. Lardner 3
1Department of Applied Research, Lakeland College Vermilion, AB, Canada T9X 1K5,
2Lakeland College, 3Department of Animal and Poultry Science, University of Saskatchewan

2:50 p.m.  186  Effect of Feedlot Finishing Compared with Grass Fed Beef Following Bale Grazing and Delayed Feedlot Entry on Steer Performance, Carcass Measurement and Net Return
Songul Senturklu 1, Douglas G. Landblom 2, Steve Paisley 3, Christina Stroh 4
1Canakkale Onsekiz Mart University, 2North Dakota State University Dickinson Research Extension Center, 3University of Wyoming, 4Dickinson State University, Dept. Agriculture and Technical Studies

Forages and Pastures II
Chair: Ryan Spurling, Utah State University
3:15 PM - 4:20 PM
207 A/B

3:15 p.m.  Forages and Pastures II Introduction

3:20 p.m.  189  Effects of Hay Maturity on the Enteric Methane Emission, Intake, and Energy Metabolism by Beef Heifers
Emalee J. Friend 1, Stacey A. Gunter 1, Corey A. Moffet 1, Paul A. Beck 2
1USDA-ARS, Oklahoma and Central Plains Agricultural Research Center, 2Oklahoma State University

3:35 p.m.  191  Evaluation of Diverse Cool-season Grass Mixtures with Red Clover on Ruminal Fermentation in Continuous Culture
Miriam A. Snider 1, Bharath K. Mulakala 1, Ashley W. Driemel 1, Sara E. Ziegler 2, Heather M. Darby 2, Kathy J. Soder 3, Andre F. Brito 4, Sabrina L. Greenwood 1
1University of Vermont, 2UVM Extension Northwest Crops and Soils Program, 3USDA-ARS,
4University of New Hampshire
3:50 p.m. 192 Outcomes of Simulated Combinations of Rangeland Management Scenarios on Soil and Nutrient Processes
Phillip A. Lancaster 1, Minfeng Tang 2, DeAnn Presley 3, Walt Fick 3, Luca Doro 4, Dustin Pendell 3, Adam Ahlers 3, Andrew Ricketts 3
1 Beef Cattle Institute/Kansas State University, 2 Beef Cattle Institute, Kansas State University, 3 Kansas State University, 4 Texas A&M University

4:05 p.m. 190 Effects of Flooding on Grazed Pastures – Forage Quality, GHG Emissions and C Stocks
Marina Miquilini 1, Ricardo Ribeiro 2, Marilia Chiavegato 2
1 Ohio State University, 2 The Ohio State University

Young Scholar Award Talks II
Chair: Joel Caton, North Dakota State University
3:30 PM - 5:05 PM
201

3:30 p.m. Young Scholar Award Talks II Introduction

3:35 p.m. 390 Young Scholar Award Talk: The Effect of Chronic Maternal Lipopolysaccharide Exposure during Late Gestation on Offspring Muscle Development
Erin Bryan 1, Nick Bode 2, Dani Shirey 2, Xuenan Chen 2, Ryan N. Dilger 3, Anna Dilger 4
1 Purina, 2 University of Illinois, 3 University of Illinois Urbana-Champaign, 4 University of Illinois at Urbana-Champaign

4:05 p.m. 392 Young Scholar Award Talk: Strategies to Maintain Nutrient Intake, Reduce Weight Loss, and Improve Livability in Newly Weaned Pigs
Madie R. Wensley 1, Mike D. Tokach 2, Jason C. Woodworth 2, Jordan T. Gebhardt 2, Robert D. Goodband 2, Joel M. DeRouchey 2
1 Pipestone, 2 Kansas State University

4:35 p.m. 391 Young Scholar Award Talk: Supplementation of Oligosaccharide-based Polymer Enhanced Growth and Disease Resistance of Weaned Pigs by Modulating Intestinal Integrity and Systemic Immunity
Kwangwook Kim 1, Yijie He 2, Cynthia N. Jinno 3, Lauren L. Kovanda 3, Xunde Li 3, David Bravo 4, Eric Cox 5, Yanhong Liu 3
1 Michigan State University, 2 Department of Animal Science, University of California, Davis, 3 University of California, Davis, 4 Panscosma|ADM, 5 Ghent University

Poster Session XI
3:45 PM - 4:45 PM
Exhibit Hall A

3:45 p.m. PSXI-9 Chemical Composition and Calculation of Standardized Amino Acid Digestibility and Diaas-like Scores Using the Precision Fed Cecetomized Rooster Assay for Novel Proteins of Aquatic and Reptile Species
Victoria A. Gomez 1, Pamela L. Utterback 2, Carl M. Parsons 2, Maria R C de Godoy 2
1 University of Illinois, 2 University of Illinois at Urbana-Champaign
3:45 p.m.  PSXI-2  Circulating Mirnas as Non-invasive Biomarkers of Chronic Kidney Disease and Calcium Oxalate Uroliths in Felines
Pooja Gupta-Saraf 1, Selena K. Tavener 1, Kiran S. Panickar 1
1Science & Technology Ctr, Hills PNC

3:45 p.m.  PSXI-3  Decreased Circulating Concentrations of CD21 and CD19 in Canines with Heart Murmur and Associated Valvular Cardiovascular Disorder
Selena K. Tavener 1, Dayakar V. Badri 1, Kiran S. Panickar 1
1Science & Technology Ctr, Hills PNC

3:45 p.m.  PSXI-12  Determination of Protein Requirements for Labrador Retriever Pups (> 14 wk-9 Mo) Using the Indicator Amino Acid Oxidation (IAAO) Technique
Jordan T. Weil 1, Jessica L. Varney 1, Heather A. Adams 1, Machelle Mullanix 1, Rhianna Bailey 1, John Moss 1, Jason W. Fowler 1, Craig N. Coon 1
1Four Rivers Kennel, LLC

3:45 p.m.  PSXI-5  Digestibility and Acceptability of Foods Containing Increasing Content of Rice Protein Concentrate Fed to Adult Cats
Elizabeth M. Morris 1, Sunil Perumalla 1, Kathy Gross 1
1Hill's Pet Nutrition

3:45 p.m.  PSXI-6  Effects of a Saccharomyces Cerevisiae Fermentation Product-supplemented Diet on Circulating Immune Cells and Oxidative Stress Markers of Dogs
Sofia M. Wilson 1, Patricia Massae Oba 2, Sofia M. Wilson 1, Matt Panasevich 3, Sharon A. Norton 4, Kelly S. Swanson 1
1University of Illinois at Urbana-Champaign, 2University of Illinois Urbana-Champaign, 3Blue Buffalo, 4Cargill, Incorporated

3:45 p.m.  PSXI-14  Effects of Footpad Dermatitis on Gene Expression of Host Defense Peptides in Laying Hens
Runxiang Zhang 1, Yanqing Chen 1, Rui Wang 1, Jun Bao 1
1College of Animal Science and Technology, Northeast Agricultural University

3:45 p.m.  PSXI-7  Effects of Hericium Erinaceus on Health of Aged Dogs
Ju Lan chun 1, Kangmin Seo 1, Hyun-Woo Cho 1, Jung-Hwan Jeon 1, Chan Ho Kim 1, Sejin Lim 1, Ki Hyun Kim 1
1National Institute of Animal Science

3:45 p.m.  PSXI-15  Effects of Selenium-enriched Fermented Chinese Herbal Medicine on Growth Performance, Immune Performance and Meat Quality of Fowl
Yunfen zhu 1, Xiaofei Chen 1, Junhui Xie 1, Rong li 1, Dejun Tan 1, guogui Wang 1, Jin Ma 1, Yuehui Ma 2
1Enshi Autonomous Prefecture Academy of Agricultural Sciences, 2Institute of Animal Science, Chinese Academy of Agricultural Sciences

3:45 p.m.  PSXI-16  Effects of Transportation to Tibet on Serum Biochemical Characteristics of Sanhe Heifers
Zhang Xinyu 1, Shengli Li 2
1China agricultural university, 2China Agricultural University
3:45 p.m. PSXI-17 Evaluation of Influence of the Total Accumulation of Toxic Elements in Blood Serum on the Indicators of Milk Productivity of the Holstein Cows
Isidora Zubac 1, Irina Sycheva 2, Alexey Komarchev 3, Petr Nikitin 4, Vladimir Vasilev 5, Irina Vasilyeva 6, Marina Stepantsevich 7
1University of Belgrade, 2Russian State Agrarian University –Moscow Timiryazev Agricultural Academy, 3Federal Scientific Center «All-Russian Research and Technological Institute of Poultry» of Russian Academy of Sciences, 4Department of Data Analysis and Machine Learning, Financial University under the Government of the Russian Federation, 5Moscow Regional Research and Clinical Institute "MONIKI", 6Federal State Autonomous Educational Institution of Higher Education I.M. Sechenov First Moscow State Medical University of the Ministry of Health of the Russian Federation (Sechenov University), 7Russian State Agrarian University – Moscow Timiryazev Agricultural Academy

3:45 p.m. PSXI-8 Evaluation of Nutrient Composition and Protein Quality Using the Precision Fed Cecectomy Rooster Assay of Novel Avian Protein Sources for Pet Nutrition
Victoria A. Gomez 1, Pamela L. Utterback 2, Carl M. Parsons 2, Maria R C de Godoy 2
1University of Illinois, 2University of Illinois at Urbana-Champaign

3:45 p.m. PSXI-18 Evaluation of Plasma Oxidation Products in Beef Calves Challenged with Lipopolysaccharide (LPS) Following Methionine Supplementation
Samantha N. Barker 1, Treylr Jackson 2, John T. Richeson 2, Jeffery A. Carroll 3, Nicole C. Burdick Sanchez 3, Paul R. Broadway 3, Jerrad F. Legako 1
1Texas Tech University, Department of Animal and Food Sciences, 2West Texas A&M University, 3USDA-ARS, Livestock Issues Research Unit

3:45 p.m. PSXI-19 Evaluation of Salmonella Enteritidis (S.E.) Cecal Excretion and Ovary Infection Rates After SE Challenge in Commercial Layer Pullets Fed with Feed Energy Company Product R2
Abdullah A. Mahfuz 1, Mathew Jones 2, Mohan Dasari 1, Roy Berghaus 3, Charles L. Hofacre 2
1Feed Energy Company, 2Southern Poultry Research Group, Inc, 3University of Georgia

3:45 p.m. PSXI-20 Evaluation of the Effects of Hempseed Cake on Immune Parameters in Response to an Endotoxin Challenge in Finishing Steers
Thomas Winders 1, Bryan W. Neville 2, Kendall C. Swanson 1
1North Dakota State University, 2USDA, ARS, U.S. Meat Animal Research Center

3:45 p.m. PSXI-1 Influence of Graded Levels of Microbially Enhanced Protein on Processing and Expansion of Extruded Dog Foods
Youhan Chen 1, Greg Aldrich 1
1Kansas State University

3:45 p.m. PSXI-10 Macronutrient and Protein Quality Evaluation of Novel Mammalian Proteins for Canine and Feline Nutrition
Victoria A. Gomez 1, Pamela L. Utterback 2, Carl M. Parsons 2, Maria R C de Godoy 2
1University of Illinois, 2University of Illinois at Urbana-Champaign
3:45 p.m.  PSXI-11  Oxidation Analysis on Chicken Meat Meals Composition, Aromatics, and Palatability: A Novel Aromatic Palatability Trial Utilizing Labrador Retrievers, Hercules Enose UFGC, SPME, and Broad Spectrum GCMS
Fiona Mccracken 1, Jason W. Fowler 1, Jessica L. Varney 1, Melissa Austin 1, Chamara Jayasundera 1, B.J. Bench 2, Craig N. Coon 1
1Four Rivers Kennel, LLC, 2Tyson Foods Ingredient Solutions Group

3:45 p.m.  PSXI-4  Use of Foodomics Analysis to Biochemically Compare Different Pet Food Ingredient Categories
Danielle Opetz 1, Alison Beloshapka 1, Patricia Massae Oba 1, Maria R C de Godoy 2, Kelly S. Swanson 2
1University of Illinois Urbana-Champaign, 2University of Illinois at Urbana-Champaign

3:45 p.m.  PSXI-13  Using the Indicator Amino Acid Oxidation (IAAO) Technique to Determine Histidine Requirements for Puppy (>14 wk-9 Mo) Labrador Retrievers
Jordan T. Weil 1, Jessica L. Varney 1, Jason W. Fowler 1, Heather A. Adams 1, Ryan Wilkinson 1, Craig N. Coon 1
1Four Rivers Kennel, LLC

3:45 p.m.  PSXI-21  Validation of a Method to Determine Dogs’ Preference for Flavors
Paris M. Johnson 1, Logan Kilburn-Kappeler 1, Kadri Koppel 1, Charles G. Aldrich 1
1Kansas State University

CSAS Graduate Student Oral Competition: PHD
Chair: Obioha Durunna, Department of Applied Research, Lakeland College Vermilion
4:30 PM - 6:00 PM
302A

4:30 p.m.  160  Effects of Bacillus Licheniformis PF9 on Growth, Nutrient Absorption, Gut Barrier Integrity, Immunity, and Intestinal Microbiota of Weaned Piglets Challenged with Enterotoxigenic Escherichia coli F4
Haoxiang Xu 1, Peng Lu 1, Joshua Gong 2, Hai Yu 3, Paula Azevedo 1, Joshua Gong 2, chengbo Yang 4
1Department of Animal Science, University of Manitoba, 2Guelph Research and Development Centre, Agriculture Agri-Food Canada, 3Guelph Research and Development Centre, Agriculture & Agri-Food Canada, Guelph, Ontario N1G 5C9, Canada, 4Department of Animal Science, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada

4:45 p.m.  161  Effect of High- and Low-fiber Diets on Growth Performance in Growing-finishing Pigs Selected for Low or High Feed Efficiency
Shunshun Jin 1, Changning Yu 2, Haoxiang Xu 3, Paula Azevedo 3, Huaiyang lei 4, Argenis Rodas-Gonzalez 5, Charles Martin Nyachoti 5, Karmin O 2, chengbo Yang 6
1University of manitoba, Department of Animal Science, 2University of manitoba, 3Department of Animal Science, University of Manitoba, 4Topigs Norsvin Canada Inc., 5University of Manitoba, 6Department of Animal Science, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada
5:00 p.m.  162  Differential Late Gestation Metabolizable Energy Intake Alters Adipose-specific Insulin Responsiveness in Antepartum Beef Cattle  
Koryn S. Hare 1, Emily Croft 2, Greg B. Penner 3, Katharine M. Wood 2, Michael A. Steele 4  
1Department of Animal Bioscience, University of Guelph, 2University of Guelph, 3Department of Animal and Poultry Science, University of Saskatchewan, 4Department of Animal Biosciences, University of Guelph

5:15 p.m.  163  Assessment of the Methanogenic Archaeal Communities Throughout the Gastrointestinal Tract in Beef Cattle with Different Breeds  
Yajing Ban 1, Mi Zhou 2, Tim A. McAllister 3, Le Luo L. Guan 2  
1University of Alberta, 2Department of Agriculture, Food and Nutritional Science, University of Alberta, Edmonton, AB T6G 2P5, Canada, 3Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada

5:30 p.m.  164  Out-of-feed Events and Gastric Ulcers in Finishing Pigs Fed 40 % Air-classified Pea Starch Diets  
Agbee L. Kpogo 1, Megan Dubois 1, Matthew Loewen 1, Denise Beaulieu 1, Rex N. Newkirk 2  
1University of Saskatchewan, 2Department of Animal and Poultry Science, University of Saskatchewan

5:45 p.m.  165  Environmental Concerns Identified Through an Anonymous Online Survey  
Staci McGill 1, Morgan Hayes 1  
1University of Kentucky

Wednesday, June 29, 2022

Poster Session XII  
Sponsored by Arm & Hammer Animal and Food Production  
7:00 AM - 8:00 AM  
Exhibit Hall A

7:00 a.m.  PSXII-9  Application of Machine Learning Algorithms to Estimate Tropical Pasture Biomass Based on Satellite Images  
Marcia H M R Fernandes 1, Jalme Fernandes 2, Ricardo Reis 3, Luis O. Tedeschi 4  
1Sao Paulo State University, UNESP, 2Sigfarm Intelligence, 3Sao Paulo State University (UNESP), 4Texas A&M University

7:00 a.m.  PSXII-1  CNV and CNVR Detection from High-density SNP Genotyping in Holstein Cattle  
Giovanni C. Ladeira 1, Pablo J. Pinedo 2, José Eduardo E. Portela Santos 1, William W. Thatcher 1, Fernanda M. Rezende 1  
1University of Florida, 2Department of Animal Sciences, College of Agricultural Sciences, Colorado State University, Fort Collins, CO, USA

7:00 a.m.  PSXII-10  Concordance Between a Time-of-flight Sensor and Plate Meter Method for Estimating Forage Mass  
Shane Gadberry 1, Tom Hess 1, Nate T. Moss 1  
1UA Livestock and Forestry Station
7:00 a.m. PSXII-2 Effect of TG5 (c.-422C>T) Polymorphism on Fatty Acid Composition of Muscle Tissue in Bull
Jela Tepavcevich 1, Irina Sycheva 2, Aleksandr Orishev 3, Irina Bystrenina 4, Azer Mamedov 3, Maria Karnaushkina 5, Vladimir Vasilev 6
1University of Belgrade, 2Russian State Agrarian University – Moscow Timiryazev Agricultural Academy, 3Russian State Agrarian University – Moscow Timiryazev Agricultural Academy, 4Russian State Agrarian University - Moscow Timiryazev Agricultural Academy, 5Federal State Autonomous Educational Institution of Higher Education «Peoples’ Friendship University of Russia» (RUDN University), 6Moscow Regional Research and Clinical Institute "MONIKI"

7:00 a.m. PSXII-3 Estimation of Heritability and Correlation of Functional Traits in the Peruvian Paso Horse (preliminary Studies)
Jorgel Vilela 1, Bertha Isabel Tupac Yupanqui 1, Maria Lourdes Velarde 1, Paola Quintana 1, Teresa Vargas 1, Rosario Gonzales 1, Aranzazu Sokolich 2, Jose Dextre 1
1Universidad Científica del Sur, Grupo de Investigación Ciencia Equina y Animales Autóctonos, 2Universidad Científica del Sur

7:00 a.m. PSXII-4 Estrus Synchronization and Artificial Insemination in Korean Black Goats Using Frozen-thawed Semen
Kwan-Woo Kim 1, Eun-Do Lee 1, Dong-Kyo kim 1, Bong-Hwan Choi 1, Sung woo Kim 1, Sang-Hoon Lee 1
1National institute of animal science

7:00 a.m. PSXII-5 Evaluation of Influence of Single-nucleotide Polymorphism of CSN3 on Amino Acid and Mineral Composition of Milk from the Holstein Cows
Mihajlo Adamovich 1, Yulia Chernyshenko 2, Irina Mironova 2, Zulfiya Galiyeva 2, Elvira Yarmukhamedova 2, Ruzel Khabibullin 2, Alla Osipova 3
1University of Belgrade, 2Bashkir State Agrarian University, 3Russian State Agrarian University – Moscow Timiryazev Agricultural Academy

7:00 a.m. PSXII-6 Evaluation of the Influence of Bgh Gene Polymorphism on Elemental Composition of Blood Serum and Beef Productivity of Black Spotted Bulls
Mihajlo Adamovich 1, Ruzel Khabibullin 2, Irina Mironova 2, Elvira Yarmukhamedova 2, Zulfiya Galiyeva 2, Yulia Chernyshenko 2, Vladimir Vasilev 3
1University of Belgrade, 2Bashkir State Agrarian University, 3Moscow Regional Research and Clinical Institute "MONIKI"

7:00 a.m. PSXII-7 Evaluation of Winter Hair Coat Shedding on Cow and Calf Performance in Crossbred Angus Cattle in Arkansas
Kirsten A. Midkiff 1, Beth B. Kegley 2, Bernard W. Krumpelman 3, B R. Kutz 4, Jeremy G. Powell 1
1University of Arkansas System Division of Agriculture, 2University of Arkansas Division of Agriculture, 3University of Arkansas, Division of Agriculture, Department of Animal Science, 4University of Arkansas

7:00 a.m. PSXII-11 Evaluation of Yellow-flowered Subspecies Falcata Alfalfa to Purple Flowered Medicago Sativa for Northern Plains: Productivity, Nutrient Profile, and in vitro True Dry Matter Digestibility
Rachael G. Christensen 1, John R. Hendrickson 1
1USDA-ARS
Gaussian Kernel Based on Geographic Information to Model Farm Effects in Genetic Evaluation of Pasture-raised Beef Cattle
Talita E. Zunino Santana 1, Renata Veroneze 2, Anderson A. Carvalho Alves 3, Gilberto R. O. Menezes 4, Guilherme J. M. Rosa 5
1Federal University of Vicosa; University of Wisconsin-Madison University of Wisconsin-Madison, 2Universidade Federal de Viçosa, 3Department of Animal and Dairy Sciences, University of Wisconsin - Madison, 4EMBRAPA Beef Cattle, 5University of Wisconsin-Madison

Genome-wide Association for Behavioral Anestrus in Swine
Hiruni R. Wijesena 1, Dan J. Nonneman 1, Gary A. Rohrer 1, Brittney N. Keel 1, Warren M. Snelling 2, Clay A. Lents 3

Heritage Raramuri Criollo Cattle Production as a Potential Strategy for Conservation of Black Grama in the Chihuahuan Desert
Shelemia Nyamuryekung’e 1, Rick Estell 2, Darren James 3, Andrés Cibils 4, Matt M. McIntosh 5, Sheri Spiegal 1, Santiago Utsumi 1
1Department of Animal and Range Science, New Mexico State University, 2Jornada Experimental Range, USDA ARS, 3USDA/ARS Jornada Experimental Range, 4Southern Plains Climate Hub, USDA ARS OCPARC, 5Animal and Range Science Department, New Mexico State University

Impact of Intensification on the Ratio Between Carbon Emission Per Human-edible Protein Produced of Nellore Young Bulls in Tropical Production Systems
Lais Lima 1, Fernando Ongaratto 2, Marcia H M R Fernandes 3, Diwakar Vyas 1, Euclides Malheiros 4
1University of Florida, 2Nutripura, 3Sao Paulo State University, UNESP, 4Unesp

Impact of Nitrogen Application and Intercrop Forage Species on Chemical Composition and Yield of Standing Corn and Intercropped Forages
Genet Mengistu 1, Yvonne Lawley 1, Kim H. Omins 1, Emma J. J. McGeough 1
1University of Manitoba

Impacts of Forage Maturity and Apple Cider Vinegar Supplementation on Fermentation Parameters Using Ruminal Batch Culture
Miriam A. Snider 1, Sara E. Ziegler 2, Heather M. Darby 2, Jana Kraft 1, Sabrina L. Greenwood 1
1University of Vermont, 2UVM Extension Northwest Crops and Soils Program

Intercropped Sorghum Sudan Grass and Cowpea for Improved Summer Pasture
Ivan R. Thomas 1, Ken P. Coffey 1, Christine C. Nieman 2, Michael P. Popp 1
1University of Arkansas, 2USDA-ARS

Pediococcus Acidilactici and Lactobacillus Helveticus Inhibit Enterotoxigenic Escherichia coli Adhesion to Porcine IPEC-J2 Intestinal Cells but Do Not Protect Paracellular Epithelial Permeability
Claudia Tellman 1, Rui Zheng 1, Elizabeth Due 1, Rafael Jimenez-Flores 2, Sheila K. Jacobi 2
1Ohio State University, 2The Ohio State University
7:00 a.m.  PSXII-17  The Effects of N Fertilization on N2O Emissions from Urine or Fecal Samples from Nellore Bulls
Fernando Ongaratto 1, Felipe Xavier 2, Laís Lima 2, Marcia H M R Fernandes 3, Diwakar Vyas 2, Euclides Malheiros 4
1Nutripura, 2University of Florida, 3Sao Paulo State University, UNESP, 4Unesp

7:00 a.m.  PSXII-21  The Impact of Genomic Selection on Canadian Holstein Cattle Population Structure
Christiana O. Obari 1, Christina M. Rochus 1, Flavio S. Schenkel 2, Filippo Miglior 3, Christine F. Baes 4
1University of Guelph, 2Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, 50 Stone Rd E, N1G 1Y2, ON, Canada, 3Centre for Genetic Improvement of Livestock, University of Guelph, Ontario, Canada & Lactanet, Genetics Division, Guelph, Canada, 4Centre for Genetic Improvement of Livestock, University of Guelph, Ontario, Canada & Institute of Genetics, Vetsuisse Faculty, University of Bern, Bern, Switzerland

7:00 a.m.  PSXII-20  Use of Statistical Process Control to Evaluate the Effect of Isoquinoline Alkaloids Supplementation on Productive Performance of Growing-finishing Pigs
Valeria c. Artuso 1, Tobias c. Steiner 1, Emilio Cano 2, Flavio Ribeiro 3, Alberto Morillo-Alujas 4
1Phytobiotics Futterzusatzstoffe GmbH, 2Rey Juan Carlos University, 3Phytobiotics North America, LLC, 4Tests & Trials

Production, Management and Environment Symposium:  
Sustainability: Moving from Buzzword to Application
Chair: Michael Looper, University of Arkansas System Division of Agriculture,  
Department of Animal Science Fayetteville  
8:00 AM - 12:00 PM  
205 A/B

8:00 a.m.  Production, Management and Environment Symposium Introduction

8:05 a.m.  318  Setting the Stage: What Are We Being Asked to Know and Do?
Constance Cullman 1
1American Feed Industry Association

8:45 a.m.  316  Sustainability in Practice at the Dairy Farm Sector
Juan Tricarico 1
1Innovation Center for U.S. Dairy

9:25 a.m.  317  Importance and Difficulty of Measuring Complete Greenhouse Gas Flux from Diverse Beef Production Systems
Galen E. Erickson 1, Andrea K. Watson 2, Andy Suyker 2, Yijie Xiong 3, J. Okalebo 1
1University of Nebraska- Lincoln, 2University of Nebraska-Lincoln, 3University of Nebraska

10:05 a.m.  Production, Management and Environment Symposium Break
10:15 a.m. 315 Recognizing and Balancing Sustainable Trade-offs in the Swine Industry
Joel M. DeRouchey 1
1Kansas State University

10:55 a.m. 319 Reflections at the Half Way Point of a Multi-institutional Comprehensive USDA Sustainable Agriculture Systems Project: Empowering the US Broiler Industry for Transformation and Sustainability
Walter Gay. Bottje 1, Xingen Lei 2, Sami Dridi 1
1University of Arkansas, 2Cornell University College of Agricultural and Life Science

11:35 a.m. Production, Management and Environment Symposium Discussion
Poster Session XIII
Sponsored by Arm & Hammer Animal and Food Production
8:15 AM - 9:15 AM
Exhibit Hall A

8:15 a.m. PSXIII-10 Association of Fatty Acids, Prebiotics and Zinc Proteinate to Support Weaned Piglet Growth in Antibiotic Growth Promoter Free Diets
Juliana S. Martins 1, Alice E. Murakami 1, Gabriel A. Araujo 1, Vitoria T. Santos 1, Magali S. Pozza 2, Felipe A. Cancian 1, Paulo C. Pozza 1
1State University of Maringá, 2State University of Maringá

8:15 a.m. PSXIII-11 Avemix XG 10 Improves Piglet Performance When Dietary Net Energy Content Is Decreased
Aurélie Montagnon 1, Dan BUSSIÈRES 2, Joan E. EDWARDS 1, Leni KUTERNA 1
1Palital Feed Additives B.V., 2Groupe CÉRÈS Inc.

8:15 a.m. PSXIII-12 Characterization of Physiochemical and Nutrient Profiles of Feedstock and Co-products from Canola Bio-oil Processing in Ruminants: Impacted by Source Origin
A. Oliveira 1, P. Yu 2
1CSAS, ASAS, 2ASAS, CSAS, ADSA

8:15 a.m. PSXIII-1 Does Providing Bedding Change the Latency and Duration of Cattle Lying Behavior During Long-distance Transport Rest Stops?
Paula Olivares Guzman 1, Sonia Marti 2, David L. Pearl 1, Karen S. Schwartzkopf-Genswein 3, Daniela M. Meléndez 3, Derek B. Haley 1
1University of Guelph, 2IRTA, Ruminant Production, 3Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada

8:15 a.m. PSXIII-13 Effect of Dietary Supplementation of Crushed Sasa Quelpaertensis Nakai on Growth Performance, Carcass Characteristics and Meat Quality in Landrace Pigs
Moon-Cheol Shin 1, Jong-An Lee 1, Jea-Young Choi 1, In-Cheol Cho 1, Hyeon-Ah Kim 1, Byoung-Chul Yang 1
1National Institute of Animal Science
8:15 a.m. PSXIII-14 Effect of Non-starch Polysaccharide Enzyme Supplementation with Low Energy Diet on Growth Performance, Lean Meat Percentage, Back Fat Thickness, and Nutrient Digestibility of Growing Pigs
Chai Bin Lim, Kimoon Kim, Md Raihanul Hoque, In Ho Kim
1Department of Animal Resources Science, Dankook University, 2Chungnam National University, 3Dankook University

8:15 a.m. PSXIII-3 Effect of Pen Stocking Density on Animal Performance, Social Behavior, and Animal and Pen Dirtiness in Holstein Bulls Fed High-concentrate Diets
Lourdes Llonch, Sonia Marti, Belen Fernandez, Francesc X. Prenafeta-Boldú, Marcal Verdu, Xavier Salsa, Maria Devant
1IRTA, Ruminant Production, 2IRTA, Sustainability in biosystems program, 3IRTA-Biosystems Sustainability, 4Alimentació Animal i Producció, bonÀrea Agrupa, 5Agropecuària Montgai S.L.

8:15 a.m. PSXIII-2 Effect of Rest, Post-rest Transport Duration, and Conditioning on Performance and Physiological Welfare Indicators of Beef Calves
Daniela M. Meléndez, Sonia Marti, Timothy D. Schwinghamer, Derek B. Haley, Xiaohui Yang, Matthew R. Reynolds, Karen S. Schwartzkopf-Genswein
1Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, 2IRTA, Ruminant Production, 3Agriculture and Agri-Food Canada, 4University of Guelph, 5Agriculture and Agri-Food Canada, Lethbridge Research and Development Centre, Lethbridge, AB Canada, 6University of Saskatchewan, Department of Animal and Poultry Science, Saskatoon, SK Canada

8:15 a.m. PSXIII-15 Effects of Bovine Colostrum Administration on Piglet Growth and Intestinal Health During the Lactation and Post-weaning Periods
Luca Lo Verso, Philippe Tanguay, Frédéric Guay
1Laval University, 2Université Laval

8:15 a.m. PSXIII-16 Effects of Clay Mineral ‘illite’ on the Growth Performance, Nutrient Digestibility and Meat-carcass Grade Quality in Growing-finishing Pigs
Kimoon Kim, Chai Bin Lim, Muniyappan Madesh, In Ho Kim
1Chungnam National University, 2Department of Animal Resources Science, Dankook University, 3Dankook University

8:15 a.m. PSXIII-17 Effects of Dietary Forage Inclusion During Finishing on Growth Performance, Feeding Behavior, and Ruminal Fermentation in Steers at Risk for Acidosis
Colten W. Dornbach, Joshua C. McCann
1University of Illinois, 2University of Illinois at Urbana-Champaign

8:15 a.m. PSXIII-4 Effects of Keel Bone Fracture on Behavioral Fear Responses of Laying Hens in the Late Laying Period
Runxiang Zhang, Kaiqi Yang, Hanlin Yu, Jun Bao
1College of Animal Science and Technology, Northeast Agricultural University

8:15 a.m. PSXIII-6 Effects of Melatonin on Physiologic Responses and Behavior in Dairy Steers Following Lps-induced Inflammation
1Texas A&M University Commerce, 2Mississippi State University, 3Vanderbilt, 4Clemson University
8:15 a.m. PSXIII-18  **Effects of Spring and Fall Stockpile Grazing Management System on Performance of Fall-calving Beef Cows, Pre-weaning Calf Performance, and Forage Characteristics**

Kylie P. Ewing ¹, Lucas T. Neira ², Teresa Steckler ³, William T. Meteer ¹, Daniel W. Shike ¹

¹University of Illinois at Urbana-Champaign, ²University of Illinois Champaign-Urbana, ³University of Illinois Champaign-Urbana Extension

8:15 a.m. PSXIII-5  **Effects of Stocking Density on the Welfare and Immune Responses of Laying Hens Housed in Small Furnished Cages**

Runxiang Zhang ¹, Hanlin Yu ¹, Ye Wang ¹, Jun Bao ¹

¹College of Animal Science and Technology, Northeast Agricultural University

8:15 a.m. PSXIII-7  **Field Testing of Lora-wan Sensors for Real-time Tracking and Biosensing of Brangus and Raramuri Criollo Cattle Grazing a Small Pasture**

Shelemia Nyamuryekung’e ¹, Glenn C. Duff ², Rick Estell ³, Santiago Utsumi ¹, Micah Funk ⁴, Andrés Cibils ⁵, Andrew Cox ¹, Qixu Gong ⁶, Huiping Cao ², Sheri Spiegel ⁷, Vinicius N. Gouvea ⁸, Carolina Brandani ⁸

¹Department of Animal and Range Science, New Mexico State University, ²New Mexico State University, ³Jornada Experimental Range, USDA ARS, ⁴Animal and Range Science Department, New Mexico State University, ⁵Southern Plains Climate Hub, USDA ARS OCPARC, ⁶Computer Science Department, New Mexico State University, ⁷USDA/ARS Jornada Experimental Range, ⁸Texas A&M AgriLife Research

8:15 a.m. PSXIII-21  **Formulations of Vitamin K, Organic Acids, Essential Oils and Plant Hydroalcoholic Extracts Prevent Coccidiosis Impact on Growth Performances in Broilers**

Carl Julien ¹

¹CRSAD

8:15 a.m. PSXIII-8  **Grazing Behavior of Cows Grazing Natural Grassland Under Silvopastoral Systems or Full Sun**

Guillermo Goncherenko ¹, Martin Claramunt ², Rodrigo Santa Cruz ³, Jean Fedrigo ³, Francisco Báez ⁴, Stefania Pancini ⁵, Vitor R.G R. G. Mercadante ⁵, Carolina Viñoles ³

¹Department of Animal and Poultry Sciences, Virginia Tech, ²Centro Universitario de la Región Este – CURE, Universidad de la República, Uruguay, ³Polo Agroforestal, Casa de la Universidad de Cerro Largo, CENUR-Noreste, Universidad de la República, Uruguay, ⁴Instituto Superior de la Carne, Centro Universitario de Tacuarembó, CENUR-Noreste, Universidad de la República, Uruguay, ⁵Virginia Tech

8:15 a.m. PSXIII-9  **Is There Any Relationship Between Water Intake and THI in a Brazilian Experimental Feedlot Under Tropical Conditions?**

Matheus C. Garcia ¹, Filipe Mendonca ¹, Matheus Carlis ², Rafael Afonso ³, Amoracyr Nuñez ⁴, Paulo Bortoleto Junior ², Vitor Viana ⁵, Dante Lanna ⁶

¹Luiz de Queiroz College of Agriculture, ²FZEA-USP, ³ESALQ/USP, ⁴University of Goias, ⁵Boehringer Animal Health, ⁶University of São Paulo
8:15 a.m.  PSXIII-19  **Snaplage Residue as a Strategy to Finish Beef Cattle Under Different Stocking Rates**  
ÍTALO BRAZ G. DE LIMA 1, Daniel R. Casagrande 2, Thiago Bernandes 2, Mateus P. Gionbelli 3, Marcio M. Ladeira 4, Daniel W. Shike 5, priscila cruz 4  
1University of Illinois Urbana-Champaign, 2University of Lavras, Brazil, 3Universidade Federal de Lavras, Brazil, 4Universidade Federal de Lavras, 5University of Illinois at Urbana-Champaign

8:15 a.m.  PSXIII-20  **Study of Brachiaria Genotype Resistance to Pasture Leafhoppers Attack**  
Jordana Andrade 1, Filipe Mendonca 2, Mailza Gonçalves 3, Ana Carolinne Silva 4, Matheus C. Garcia 2, Joao Ventorin 5, Leandro Barbero 4  
1University of Uberlandia, 2Luiz de Queiroz College of Agriculture, 3São Paulo State University, 4University of Uberlândia, 5ESALQ-USP

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**Horse Species**  
Chair: Tayler Hansen, Trouw Nutrition  
8:30 AM - 11:00 AM  
201

8:30 a.m.  Horse Species Introduction

8:35 a.m.  214  **Awardee Talk: Using Nutrition to Improve Immune Competence in Horses**  
Lori K. Warren 1  
1University of Florida

9:05 a.m.  216  **Effects of Total Equine Grain Containing Ascophyllum Nodosum Seaweed Extract and Chelated Minerals on in-vitro dDM & dNDF, Body Composition, and Post-exercise Recovery in Mature Quarter Horse Mares**  
Kai Yun Lai 1, Dylan Porter 1, Jamie A. Boyd 1  
1Sul Ross State University

9:20 a.m.  220  **Effects of Total Equine Grain with Ascophyllum Nodosum Seaweed Extract and Chelated Minerals on Forage Intake, DM, NDF, and ADF Digestibility, in Quarter Horses Under Performance Conditions**  
Jamie A. Boyd 1, Kai Yun Lai 1  
1Sul Ross State University

9:35 a.m.  219  **Evaluation of Dietary Arginine Supplementation to Increase Placental Nutrient Transporters of Aged Mares**  
Rafael E. Martinez 1, Jessica L. Leatherwood 1, Amanda N. Bradbery 2, Brittany L. Paris 3, Carolyn J. Hammer 4, Dale Kelley 5, Fuller W. Bazer 3, Guoyao Wu 3  
1Department of Animal Science, Texas A&M University and Texas A&M AgriLife Research, 2Montana State University, 3Texas A&M University, 4Department of Animal Sciences, North Dakota State University, 5College of Veterinary Medicine, Oklahoma State University

9:50 a.m.  Horse Species Break
10:00 a.m.  215  Awardee Talk: Astaxanthin Supplementation During Deconditioning and Reconditioning Periods Reduces Oxidative Stress in Circulation in Polo Ponies
Mia Y. Kawaida 1, Oh Sung Kwon 2, Ahram Ahn 3, Amanda S. Reiter 1, Nicole M. Tillquist 1, Sarah A. Reed 4
1University of Connecticut, 2University of Connecticut, 3University of Connecticut, 4Dept. of Animal Science, University of Connecticut

10:30 a.m.  217  Acceptability of Hempseed Meal in Horses
Ryon W. Springer 1, Teighlor D. Cross 2, Paxton L. Turner 2, Kallyn S. Ciesynski 2, Lillian F. Esterl-Byrne 2, Cheyenne, A. C. Mason 2, Caitlan C. Thorne 2, Kimberly A. Guay 1, Kimberly B. Wellmann 1, Trinette N. Jones 1
1Department of Animal Science, Tarleton State University, 2Tarleton State University

10:45 a.m.  218  Hard and Easy Keeper Microbiomes Reveal Unique Microbial Responses to Carbohydrate and Protein Sources
Alexa C.B Johnson 1, Amy S. Biddle 1
1University of Delaware
9:35 a.m. 124 The Acute Effects of Supplementing a Meat-based Diet with a Combination of Creatine, Carnitine and Choline, Taurine or Methionine on Post-prandial Plasma Creatine and Creatinine Concentrations in Dogs
Sydney Banton 1, Ulrike Braun 2, Julia Guazzelli Pezzali 3, Anna Kate K. Shoveller 1
1University of Guelph, 2AlzChem Trostberg GmbH, 3University of Guelph

9:50 a.m. 120 Seasonal Variation of Select Serum Electrolyte Concentrations in Siberian Huskies Housed Outside in Ontario Canada from May Until October
Terence C. McCorkell 1, Pawanpreet Singh 1, James Templeman 1, Cara L. Cargo-Froom 1, Anna Kate K. Shoveller 1
1University of Guelph

10:05 a.m. Companion Animal II Break

10:15 a.m. 121 Comparison of Corn Fermented Protein (CFP) to Traditional Yeast and Distillers Grain Fed to Healthy Adult Cats
Logan Kilburn-Kappeler 1, Charles G. Aldrich 1
1Kansas State University

10:30 a.m. 116 The Effects of Dietary Phenylalanine on Gastric Emptying, Macronutrient Metabolism and Feed Intake in Healthy Adult Cats
Jocelyn G. Lambie 1, Julia Guazzelli Pezzali 2, Pawanpreet Singh 1, Anna Kate K. Shoveller 1
1University of Guelph, 2University of Guelph

10:45 a.m. 117 Assessment of Complete Blood Count and Biochemistry Parameters in Adult Dogs Fed a Grain-free Diet with up to Forty-five Percent Pulse Inclusion
Pawanpreet Singh 1, Sydney Banton 1, James Templeman 1, Shari Raheb 2, Jennifer L. Saunders-Blades 3, Darcia Kostiuk 4, Janelle Kelly 3, Adronie Verbrugghe 5, Anna Kate K. Shoveller 1
1University of Guelph, 2Department of Clinical Studies, University of Guelph, Guelph, Ontario, 3Champion Petfoods, 4Champion Pet Foods LP, Morinville, Alberta, Canada., 5Ontario Veterinary College

11:00 a.m. 118 Functional Properties of Bifidobacterium Animalis Subsp. Lactis CECT 8145 in Canine Nutrition
Emanuela Kayser 1, Fei He 1, Gary M. Davenport 2, Maria R C de Godoy 3
1University of Illinois at Urbana Champaign, 2Archer Daniels Midland Company, 3University of Illinois at Urbana-Champaign

11:15 a.m. 119 Change in Serum Total Lipid Profiles in Dogs Supplemented with Camelina, Flaxseed, or Canola Oil for 16 Weeks
Scarlett Burron 1, Taylor Richards 1, Anna Kate K. Shoveller 2, Wendy Pearson 1, Caitlin E. Grant 3, Nadeem Akhtar 2, Luciano Trevizan 4
1Department of Animal Biosciences, University of Guelph, 2University of Guelph, 3Department of Clinical Studies, Ontario Veterinary College, University of Guelph, 4Departamento de Zootecnia, Universidade Federal do Rio Grande do Sul
11:30 a.m. 127 Standardized Amino Acid Digestibility and Protein Quality of Extruded Canine Diets Containing Hydrolyzed Protein
Clare Hsu 1, Pamela L. Utterback 1, Carl M. Parsons 1, Fabio Marx 2, Ryan Guldenpfennig 2, Maria R C de Godoy 1
1University of Illinois at Urbana-Champaign, 2Kemin Industries, Inc.

Young Scholar Award Talks III
Chair: Joel Caton, North Dakota State University
8:30 AM - 11:45 AM
209 A/B

8:30 a.m. Young Scholar Award Talks III Introduction

8:35 a.m. 394 Young Scholar Award Talk: Evaluation of New Markers to Predict Sperm Longevity and Bull Fertility
Saulo Menegatti Zoca 1, Julie Walker 2, Joseph Dalton 3, George A. Perry 4
1South Dakota State University Department of Animal Science, Brookings, SD, 2South Dakota State University, 3University of Idaho, 4Texas A&M AgriLife Research, Overton, TX

9:05 a.m. 395 Young Scholar Award Talk: Melatonin: A Promising Therapeutic for Compromised Pregnancies
Zully E. Conrreras-Correa 1, Riley D. Messman 1, Héctor L. Sánchez-Rodríguez 2, Derris D. Burnett 3, Caleb O. Lemley 1
1Mississippi State University, 2University of Puerto Rico-Mayagüez, 3PhD

9:35 a.m. 393 Young Scholar Award Talk: Investigation of Pain and Analgesic Strategies in Cattle Undergoing Painful Husbandry Procedures and Disease Conditions
Miriam S. Martin 1, Michael D. Kleinhenz 1, Brad J. White 2, Abbie Viscardi 3, Lily N. Edwards-Callaway 4, Terry E. Engle 5, Blaine Johnson 3, Shawnee R. Montgomery 1, Andrew K. Curtis 1, Mikaela Weeder 1, Maria E. Lou 6, Dale A. Blasi 1, Kelli M. Almes 1, Raghavendra G. Amachawadi 3, Harith Salih 1, Matt D. Miesner 7, Charley A. Cull 8, Jon E. Seagren 8, Kelly F. Lechtenberg 8, Angela Baysinger 9, Jason Nickell 10, Octavio Guimareas 6, David Schafer 11, Johann F. Coetzee 12
1Kansas State University, 2Beef Cattle Institute, Department of Clinical Sciences, College of Veterinary Medicine, Kansas State University, 3Kansas State University College of Veterinary Medicine, 4Department of Animal Sciences, Colorado State University, 5Colorado State University, 6University of Minnesota, 7Department of Clinical Sciences, Kansas State University, 8Midwest Veterinary Services, Inc., 9Merck Animal Health, 10Allflex Livestock Intelligence, 11Colorado Agricultural Experiment Station, Colorado State University, 12Kansas State University College of Veterinary Medicine, Department of Anatomy and Physiology, Manhattan, KS

10:05 a.m. Young Scholar Award Talks III Break
10:15 a.m.  **396 Young Scholar Award Talk: The Selection of Potential Probiotics for Bovine Respiratory Disease Treatment and Prevention**
Samantha M. Howe 1, Jianmin Chai 2, Hunter M. Usdrowski 2, Sarah Capik 3, Beth B. Kegley 4, John T. Richeson 5, Jeremy Powell 1, Jiangchao Zhao 2
1University of Arkansas, 2Department of Animal Science, University of Arkansas, Fayetteville, AR, 72701, 3Texas A&M AgriLife Research and Department of Veterinary Pathobiology at Texas A&M College of Veterinary Medicine, 4University of Arkansas Division of Agriculture, 5West Texas A&M University

10:45 a.m.  **398 Young Scholar Award Talk: Influence of a Lifetime Regimen of a Modified-live Viral or Killed Viral Vaccination Against Bovine Viral Diarrhea Virus on Beef Cattle Performance**
Emily A. Melchior-Tiffany 1
1New Mexico State University

11:15 a.m.  **397 Young Scholar Award Talk: Detecting Livestock Welfare Concerns and Production Issues Using Accelerometer and Global Positioning Systems**
Colin T. Tobin 1, Derek W. Bailey 2, Sara C. Gurule 3, Jennifer A. Hernandez Gifford 2, Mark G. Trotter 4
1North Dakota State University, 2New Mexico State University, 3Texas A&M University, 4CQUniversity

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**Forages and Pastures Symposium I:**

**Complementary Forage Systems for Grazing Livestock**
Chair: Samuel Wyffels, Northern Agriculture Research Center
8:30 AM - 12:00 PM
207 A/B

8:30 a.m.  **Forages and Pastures Symposium I Introduction**

8:35 a.m.  **196 Integration of Cover Crops and Livestock Grazing**
Darrin L. Boss 1
1Northern Agriculture Research Center, Montana State University

9:05 a.m.  **197 Smart Foodscapes: Developing Functional Landscapes to Enhance the Sustainability Livestock Production Systems**
Juan J. Villalba 1
1Utah State University

9:35 a.m.  **194 Sustainable Livestock Production from Phytochemically Diversified Pastures**
Serkan Ates 1
1Oregon State University

10:05 a.m.  **Forages and Pastures Symposium I Break**

10:15 a.m.  **193 Forage Species to Improve Nutritional Opportunity for Grazing Livestock – a Southeast Perspective**
Ken P. Coffey 1, Christine C. Nieman 2
1University of Arkansas, 2USDA-ARS
10:45 a.m. 198  Using Annual Forage Crops to Extend Grazing: What Are the Benefits to Production and Livestock Enterprise Economics  
Paul A. Beck 1, Wayne Coblentz 2, John Jennings 3, Matthew R. Beck 4  
1Oklahoma State University, 2USDA ARS (Retired), 3University of Arkansas Division of Agriculture, 4USDA-ARS

11:15 a.m. 195  Breeding Winter and Spring Two-row Barley for More Sustainable Livestock Production  
Jamie Douglas Sherman 1, Traci Hoogland 2, Jessica Williams 2, Greg Lutgen 2  
1Montana State University, 2Montana State

11:45 a.m. Forages and Pastures Symposium I Q&A
Animal Breeding and Genetics Symposium II:
What Sustainable Livestock Breeding Looks Like at Home and Abroad
Chair: Gota Morota, School of Animal Sciences, Virginia Polytechnic Institute and State University; Breno Fragomeni, University of Connecticut
8:30 AM - 3:15 PM
301 A/B

8:30 a.m. Animal Breeding and Genetics Symposium II Introduction I

8:35 a.m. Invited Speaker Dr. Luiz Brito
Luiz F. Brito 1
1Purdue University

9:05 a.m. Sustainable Livestock Breeding with a Focus on Heat Stress
Ignacy Misztal 1
1University of Georgia

9:35 a.m. Sustainable Dairy Breeding: Working within the US National Evaluation System
Asha Miles 1
1AGIL-ARS-USDA

10:05 a.m. Animal Breeding and Genetics Symposium II Panel Discussion I

1:00 p.m. Animal Breeding and Genetics Symposium II Introduction II

1:05 p.m. Complementary Roles for Genetic Selection and Population Dynamics in Enhancing Livestock Sustainability
Robin R. White 1
1Virginia Tech School of Animal Sciences

1:35 p.m. Sustainable Livestock Breeding: Challenges and Opportunities
Christine F. Baes 1, Christina M. Rochus 2, Kerry Houlaahan 3, Gerson A. Oliveira Jr 4, Nienke Van Staaveren 2, Filippo Miglior 5
1Centre for Genetic Improvement of Livestock, University of Guelph, Ontario, Canada & Institute of Genetics, Vetsuisse Faculty, University of Bern, Bern, Switzerland, 2University of Guelph, 3University Of Guelph, 4University of Guelph, Department of Animal Biosciences, Centre for Genetic Improvement of Livestock, Guelph, ON, Canada, 5Centre for Genetic Improvement of Livestock, University of Guelph, Ontario, Canada & Lactanet, Genetics Division, Guelph, Canada

2:05 p.m. Animal Breeding and Genetics Symposium II Break

2:15 p.m. Genetics and Genomic Approaches for Sustainable Dairy Cattle Improvement in Smallholder Dairy Systems
Raphael Mrode 1, Chinyere Ekine-Dzivenu 1, Julie Ojango 1, Mwai Okeyo 1
1ILRI

2:45 p.m. Animal Breeding and Genetics Symposium II Panel Discussion II
12:00 p.m.  PSXIV-1  Effect of Ambient Temperature on Respiration Rate and Ruminal Temperature for Growing-finishing Calf-fed Holstein Steers in the Feedlot During Summer in Southern California
Brooke C. Latack ¹, Pedro V. Carvalho ², Richard A. Zinn ²
¹University of California Cooperative Extension, ²University of California - Davis

12:00 p.m.  PSXIV-2  Effect of Drinking Water Disinfection Treatments on Water Quality, Water and Feed Consumption, Apparent Total Tract Digestibility and Health in Holstein Bulls Fed High-concentrate Diets
Lourdes Llonch ¹, Marcal Verdu ², Sonia Marti ¹, Joan Riera ³, Carles Medinya ⁴, Jordi Cucurull ⁵, Maria Devant ¹
¹IRTA, Ruminant Production, ²Alimentació Animal i Producció, bonÀrea Agrupa, ³Nanta SA, ⁴SINUAL, ⁵Grup BonArea

12:00 p.m.  PSXIV-3  Effect of Pen Mud Accumulation on the Growth Performance Growing-finishing Calf-fed Holstein Steers in the Feedlot During Summer in Southern California
Pedro V. Carvalho ¹, Brooke C. Latack ², Richard A. Zinn ¹
¹University of California - Davis, ²University of California Cooperative Extension

12:00 p.m.  PSXIV-4  Effects of Floor Space Allowance on Productivity of Sows
Yejin Min ¹, Yohan Choi ¹, Joeun Kim ¹, Doowan Kim ¹, Yongdae Jeong ¹, Hyunju park ¹, Hakjae Chung ¹, Soojin Sa ¹, Dayeon Jeon ¹, Hyunju Jin ¹
¹National Institute of Animal Science

12:00 p.m.  PSXIV-17  Evaluation of Dietary Saccharomyces Cerevisiae Fermentation Products on Performance of Captive White-tailed Deer (Odocoileus Virginianus)
Kyle Stutts ¹, Tom S. Edrington ², Madison McCluskey ¹, Jessica L. Leatherwood ³
¹Sam Houston State University, ²Diamond V, ³Department of Animal Science, Texas A&M University and Texas A&M AgriLife Research

12:00 p.m.  PSXIV-5  Evaluation of Heat Resistance in Beef and Dairy Calves Using Peripheral Blood Mononuclear Cells and Hair Follicles Based on Heat Shock Protein 70 Genetic Polymorphisms
WonSeob Kim ¹, DongQiao Peng ², YongHo Jo ³, JangHoon Jo ³, Jalil G. Nejad ³, JaeSung Lee ⁴, Jongkyoo Kim ¹, HongGu Lee ⁴
¹Michigan State University, ²Department of Animal Science, College of Animal Science, Jilin University, 5333 Xi'an Road Changchun City, Jilin Province, 130062, P.R. China, ³Department of Animal Science and Technology, Konkuk University, ⁴Department of Animal Science and Technology, Sanghuh College of Life Science Konkuk University, Seoul 05029, Republic of Korea, ⁵Department of Animal Science and Technology, Sanghuh College of Life Science, Konkuk University, Seoul 05029, Republic of Korea

12:00 p.m.  PSXIV-18  Fecal Dry-matter Output Determination from Irregular Marker Doses
Corey A. Moffet ¹, Stacey A. Gunter ¹
¹USDA-ARS, Oklahoma and Central Plains Agricultural Research Center
12:00 p.m.  PSXIV-6  Feeding Frogs: A Path for Commercial Production Without the Need of Live Food
Malcolm L. McCallum 1, Mary Mitchell 1, Yonathan Tilahun 1
1Langston University

12:00 p.m.  PSXIV-8  Gender Differences and Reference Intervals of Concentrations of Chemical Elements in Hair from the Mane of the Bashkir Horses in the South Ural Biogeochemical Province
Mihajlo Adamovich 1, Irina Mironova 2, Zulfiya Galiyeva 2, Ruzel Khabibullin 2, Yulia Chernyshenko 2, Nail Gubaidullin 2, Irina Vasilyeva 3
1University of Belgrade, 2Bashkir State Agrarian University, 3Federal State Autonomous Educational Institution of Higher Education I.M. Sechenov First Moscow State Medical University of the Ministry of Health of the Russian Federation (Sechenov University)

12:00 p.m.  PSXIV-12  Genetic Selection Using Ecofeed Index Reduces Carbon Footprint in Lactating Dairy Cows
Ermias Kebreab 1, Anna Naranjo 2, Jocelyn R. Johnson 3, Nader Deeb 3
1UC Davis, 2University of California, Davis, 3ST Genetics

12:00 p.m.  PSXIV-9  Identification of Differential Methylation Regions as Candidate Discriminantal Markers of Bovine Subclinical Mastitis Caused by Staphylococcus aureus
Mengqi Wang 1, Mario Laterrière 2, Pier-Luc Dudemaine 1, Nathalie Bissonnette 1, David Gagné 2, Jean-Philippe Roy 3, Sunday O. Peters 4, Marc-André A. Sirard 5, Eveline M. Ibeagha-Awemu 1
1Sherbrooke Research and Development Centre, Agriculture and Agri-Food Canada, 2Quebec Research and Development Centre, Agriculture and Agri-Food Canada, 3Faculté de médecine vétérinaire, Université de Montréal, 4Department of Animal Science, Berry College, 5Department of Animal Science, Laval University

12:00 p.m.  PSXIV-10  Influence of Breeds on the Quality of Chilled Goat Semen Collected by Artificial Vagina
Adel R. R. Moawad 1, Tiffany Reese 2, Miller Schauaston 1, Mahipal Singh 1, Brou Kouakou 1
1Fort Valley State University, 2Animal Science Program, College of Agriculture, Family Sciences, and Technology, Fort Valley State University,

12:00 p.m.  PSXIV-11  Microbial Characterization of Digital Dermatitis and Foot Rot in Feedlot Cattle
Nicholas S. Wong 1, Karen S. Schwartzkopf-Genswein 2, Murray D. Jelinski 3, Trevor Alexander 4, Eugene Janzen 5, Sarah E. Erickson 6, Rodrigo Ortega Polo 7
1Agriculture and Agri-Food Canada, Lethbridge Research and Development Centre, Lethbridge, AB Canada; Department of Large Animal Clinical Sciences, Western College of Veterinary Medicine, 2Lethbridge Research and Development Centre, Agriculture and Agri-Food Canada, 3University of Saskatchewan, 4Agriculture Agri-Food Canada, Lethbridge Research and Development Center, 5University of Calgary, 6Feedlot Health Management Services by TELUS Agriculture; Western College of Veterinary Medicine Department of Large Animal Clinical Sciences, 7Agriculture and Agri-Food Canada, Lethbridge Research and Development Centre, Lethbridge, AB Canada
12:00 p.m.  PSXIV-7  Physiological Responses to Caprine Cocidiosis During a 100-year Rain Even in Oklahoma: An Opportunistic Case Study with Implications for Climate Change and Clinical Diagnosis
Malcolm L. McCallum 1, Yonathan Tilahun 1, Jessica Quijada-Pinango 1, Zaisen Wang 1
1Langston University

12:00 p.m.  PSXIV-20  Potassium Carbonate Rescues Growth and Bone Attenuation Responses to Ammonium Chloride in Feed for Growing Pigs, Supporting the Importance of the K:cl Ratio in Diet Formulations
Johanna Hutchinson 1, Brittney P. Kokinos 1, Mariola Grez Capdeville 1, Laura A. Amundson 1, Thomas D. Crenshaw 1
1Department of Animal and Dairy Sciences, University of Wisconsin-Madison

12:00 p.m.  PSXIV-13  Reference Intervals for the Concentrations of Main Essential and Toxic Elements in the Hair from the Mane of the Yakut Horses Bred in the Republic of Sakha (Yakutia)
Jela Tepavcevich 1, Grigory Machakhtyrov 2, Varvara Machakhtyrova 2, Yana Shadrina 2, Vasilena Sleptsova 2
1University of Belgrade, 2Yakut Scientific Research Institute of Agriculture (YSRIA)

12:00 p.m.  PSXIV-14  Selenium and Copper Deficiency Associated Decline in Reproductive Performance in Summer Bred, Rotationally Grazed, Forage Fed Beef Cattle
Jaedyn K. Rawson 1, Quinn Baptiste 1, Robert Harned 2, Marlon Knights 3
1Berea College, 2Farm Manager, 3The University of Trinidad and Tobago

12:00 p.m.  PSXIV-15  Synergistic Inhibition of Staphylococcal Growth by Select Nitrocompounds and Sodium Chlorate
Oscar Ruiz-Barrera 1, Robin C. Anderson 2, MICHAEL E. HUME 3, DAVID J. NISBET 3, CLAUDIO ARZOLA-ALVAREZ 4, YAMICELA CASTILLO-CASTILLO 4, Jaime Salinas-Chavira 5, MARINA ONTIVEROS-MAGADÁN 6, Claudio Angulo-Monoya 7, MONSERRATH FELIX-PORTILLO 4, FRANCISCO CASTILLO-RANGEL 4
1Universidad Autónoma de Chihuahua, 2USDA/ARS, Southern Plains Agricultural Research Center's Food & Feed Safety Research Unit, 3USDA/ARS, 4UNIVERSIDAD AUTONOMA DE CHIHUAHUA, 5Universidad Autónoma de Tamaulipas, 6UNIVERSIDAD AUTONOMA DE CIUDAD JUAREZ, 7Universidad Autonoma de Sinaloa

12:00 p.m.  PSXIV-16  The Influence of Lead Concentration in Blood Serum on the Antioxidant Status and the Intensity of Lipid Peroxidation in the Holstein Cows
Isidora Zubac 1, Irina Sycheva 2, Irina Bystrenina 3, Alexey Komarchev 4, Tamara Kurmakaeva 5, Maria Karnaushkina 6, Ekaterina Kazakova 2
1University of Belgrade, 2Russian State Agrarian University –Moscow Timiryazev Agricultural Academy, 3Russian State Agrarian University - Moscow Timiryazev Agricultural Academy, 4Federal Scientific Center «All-Russian Research and Technological Institute of Poultry» of Russian Academy of Sciences, 5Russian Academy of Agricultural Personnel Support, 6Federal State Autonomous Educational Institution of Higher Education «Peoples' Friendship University of Russia» (RUDN University)
Nonruminant Nutrition and Swine Species Symposium II:
Dealing with E. coli Challenges in a Pre and Post Pharmacological Zinc World
Chair: Jon Bergstrom, DSM
1:00 PM - 5:00 PM
Ballroom B

1:00 p.m. Nonruminant Nutrition and Swine Species Symposium II Introduction

1:05 p.m. 246 Pathogenic Escherichia coli Populations Within the Gut Microbiota of Commercial Swine Herds in the U.S
Ellen Davis 1
1ChurchDwight

1:50 p.m. 245 Preparing for a Low Zinc World a New Paradgime for Feeding Piglet
GILLES LANGEIOIRE 1
GILLES LANGEIOIRE CONSULTING

2:35 p.m. Nonruminant Nutrition and Swine Species Symposium II Break

2:50 p.m. 244 Application of the Escherichia coli Challenge Model in Developing Strategies to Improve Gut Health and Function in Weaned Pigs
Charles Martin Nyachoti 1, Jinyoung Lee 1, chengbo Yang 2
1University of Manitoba, 2Department of Animal Science, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada

3:35 p.m. 247 Nutritional Interventions: Our Experiences from the Field
Dan BUSSIERES 1
Groupe CÉRÈS Inc.

4:15 p.m. 248 U.S. Challenges with E. coli and Road Map for the Future
Kyle Coble 1
JBS Live Pork

Poster Session XV
1:15 PM - 2:15 PM
Exhibit Hall A

1:15 p.m. PSXV-11 A Postbiotic from Saccharomyces Cerevisiae Fermentation Improves Microbiome Robustness in Young Stress-challenged Horses in Training
Erika Ganda 1, Anirikh Chakrabarti 2, Maria I. Sardi 3, Jillian M. Bobel 4, Briana Kozlowicz 5, Sharon A. Norton 5, Lori K. Warren 4, Ehsan Khafipour 6
1The Pennsylvania State University, 2Cargill, Inc., 3Cargill Biotechnology Research and Development Center-Biology, 4University of Florida, 5Cargill, Incorporated, 6Cargill Animal Nutrition

1:15 p.m. PSXV-4 Analysis of the Relationship Between Carcass Traits and Linear Body Measurements in Hanwoo Cattle
Mina Park 1, Masoumeh Naserkheil 1
1National Institute of Animal Science
Application of a Survey Instrument for Determining the Impact of Horse Breed Association Youth Programs for Youth with Attention Deficit Hyperactivity Disorder
Molly Nicodemus 1, Molly Friend 2, Holly Evans 2, Katie Holtcamp 2, Julius Culwell 3
1Animal & Dairy Sciences, Mississippi State University, 2Mississippi State University, 3Grace Christian School

Association of Experience and Pre-race Behavior in Performance Among Racing Quarter Horses
Carley Sedziol 1, Sari Bosnyak 2, Nadja Knox 3, Haley Ravia 3, Clarence Edward Ferguson 4
1Equine Studies Saint Mary of the Woods College, 2School of Animal Rural and Environmental Sciences, Nottingham Trent University, 3Department of Agricultural Sciences McNeese State University, 4Saint Mary of the Woods College

Clodronate Use Does Not Influence Physical Growth Parameters in Yearling Horses Undergoing Forced Exercise
Matthew B. Conrad 1, Jessica L. Leatherwood 2, Kati G. Glass 3, Carolyn E. Arnold 4, Brittany L. Paris 3, James M. George 3, Rafael E. Martinez 2, Brian D. Nielsen 5, Aimee C. Colbath 6, Thomas H. Welsh 7, Amanda N. Bradbery 1
1Montana State University, 2Department of Animal Science, Texas A&M University and Texas A&M AgriLife Research, 3Texas A&M University, 4Department of Large Animal Clinical Sciences, Texas A&M University, 5Michigan State University, 6Department of Large Animal Clinical Sciences, Michigan State University, 7Texas A&M University, Department of Animal Science, College Station, TX

Development of Imaging Techniques to Evaluate Dietary Interventions That Promote Regression of Osteochondrotic Lesions in a Growing Pig Model
Brittney P. Kokinos 1, Laura A. Amundson 1, Thomas D. Crenshaw 1, Pam J. Lang 2
1Department of Animal and Dairy Sciences, University of Wisconsin-Madison, 2Department of Orthopedics and Rehabilitation, University of Wisconsin-Madison

Effect of Forty-eight Hours of Feed and Water Deprivation on the Performance of Grazing Nellore Heifers
Mateus José Inácio de Abreu 1, Iorrano A. A. Cidrini 2, Luís Henrique C. Batista 3, Igor Machado Ferreira 1, Karla A. Oliveira 3, Luciana Melo Sousa 4, Matheus Queiroz de S. França 5, Gustavo Henrique Maciel Bisio 6, Flávio Dutra de Resende 7, Gustavo Rezende Siqueira 7
1UNESP/APTA, 2Montana State University, 3Unesp - FCAV, Jaboticabal, SP, Brazil, 4UNESP / APTA, 5UNIFEB, Barretos, Sp, Brazil, 6UNIFEB / APTA, 7APTA

Effect of Supplemental Garlic on the Incidence of Heinz Body Anemia in Non-working Horses
Phillip A. Gunter 1, Victoria Willis 2, Emily Cook 3
1Western Kentucky University, 2Alltech, 3ADM Animal Nutrition

Effects of Dietary Supplementation with Spray Dried Plasma, Dried Intestinal Hydrolysates or Bovine Colostrum on the Growth and Intestinal Health of Weanling Pigs
Luca Lo Verso 1, Philippe Tanguay 1, Marie-Pierre Létourneau-Montminy 2, Frédéric Guay 2
1Laval University, 2Université Laval
1:15 p.m.  PSXV-18  Effects of Drying Methods for Black Soldier Fly Larva Meals on in vitro Nutrient Disappearance
Jeonghyeon Son ¹, Seol Hwa Park ², Hyun Jung Jung ², Beob G. Kim ¹
¹Konkuk University, ²National Institute of Animal Science, Rural Development Administration

1:15 p.m.  PSXV-19  Effects of L-glutamine and L-glutamate on Nursery Pigs Fed Diets with Low Digestible Lysine Content
Erika S. Dorea ¹, Valdir Ribeiro Júnior ², Amanda Medeiros Correia ³, Gabriel C. Rocha ¹
¹Department of Animal Science, Universidade Federal de Viçosa, Minas Gerais, Brazil, ²Department of Animal Science, Universidade Federal de Sergipe, Nossa Senhora da Glória, Brazil, ³Universidade Federal de Viçosa

1:15 p.m.  PSXV-20  Effects of Salicylic Acid on Growth Performance, Fecal Score, Blood Profile and Nutrient Digestibility in Weaned Pigs
Kimoon Kim ¹, Chai Bin Lim ², Cao Shanchuan ², In Ho Kim ³
¹Chungnam National University, ²Department of Animal Resources Science, Dankook University, ³Dankook University

1:15 p.m.  PSXV-1  Genetic Variants of the Ghrelin, ghsr1a, MBOAT4 and NPY Genes Related to Feed Efficiency Traits and Ghrelin Plasma Concentration in Hampshire Lambs
José G. Pérez-Álvarez ¹, Francisco J. Jahuey-Martínez ¹, José A. Martínez-Quintana ², Ana M. Sifuentes-Rincón ³, Guadalupe N. Aguilar-Palma ¹, Francisco A. A. Paredes Sánchez ³, Joel Domínguez-Viveros ¹, Felipe A. Rodríguez-Almeida ²
¹Universidad Autónoma de Chihuahua, Facultad de Zootecnia y Ecología, ²Universidad Autónoma de Chihuahua, ³Instituto Politécnico Nacional-Centro de Biotecnología Genómica

1:15 p.m.  PSXV-2  Genome-wide Association and Gene Network Analysis of Fatty Acid Composition in Beef from Brangus Cattle
Eduardo E. Rodriguez ¹, Raluca G. Mateescu ¹
¹University of Florida

1:15 p.m.  PSXV-3  Genome-wide Association Study for Sweat Gland Area in Multi-breed Brahman-angus Population
Aakilah Hernandez ¹, Andrea N. Nunez Andrade ¹, Eduardo E. Rodriguez ¹, Kaitlyn Sarlo Davila ², Raluca G. Mateescu ¹, Gabriel A. Zayas ¹
¹University of Florida, ²USDA

1:15 p.m.  PSXV-5  Incorporating Breed of Origin and Runs-of-homozygosity Information in a Genome-wide Association for Meat Traits in a Brangus Commercial Herd
Gabriel A. Zayas ¹, Eduardo Rodríguez ¹, Kaitlyn Sarlo Davila ², Andrea N. Nunez Andrade ¹, Aakilah Hernandez ¹, Fernanda M. Rezende ¹, Raluca G. Mateescu ¹
¹University of Florida, ²USDA
1:15 p.m.  PSXV-6  Influence of GDF5 Gene Polymorphism on the Concentration of Essential and Toxic Elements in Blood Serum and Milk Productivity of the Holstein Cows
Isidora Zubac 1, Irina Sycheva 2, Alexey Komarchev 3, Petr Nikitin 4, Aleksandr Orishev 5, Irina Vasilyeva 6, Vera Krasavin 2
1University of Belgrade, 2Russian State Agrarian University –Moscow Timiryazev Agricultural Academy, 3Federal Scientific Center «All-Russian Research and Technological Institute of Poultry» of Russian Academy of Sciences, 4Department of Data Analysis and Machine Learning, Financial University under the Government of the Russian Federation, 5Russian State Agrarian University – Moscow Timiryazev Agricultural Academy, 6Federal State Autonomous Educational Institution of Higher Education I.M. Sechenov First Moscow State Medical University of the Ministry of Health of the Russian Federation (Sechenov University)

1:15 p.m.  PSXV-7  Nutrient Digestibility Evaluation in Finisher Pigs from Diverse Feed Efficiency Groups
Laura Beens 1, Gustavo A. Mejicanos 1, Ethendhar Rajendiran 1, chengbo Yang 2, Charles Martin Nyachoti 3, Huaigang lei 4, Egbert Knol 5, Rob Bergsma 5, Argenis Rodas-Gonzalez 3
1University of Manitoba, Department of Animal Science, 2Department of Animal Science, University of Manitoba, Winnipeg, Manitoba R3T 2N2, Canada, 3University of Manitoba, 4Topigs Norsvin Canada Inc., 5Topigs Norsvin Research Centre

1:15 p.m.  PSXV-10  Poor Maternal Nutrition Impacts Mrna Expression of Epigenetic Factors in Ram Offspring Liver
Madelyn A. Dupre 1, Nicole M. Tillquist 1, Amanda S. Reiter 1, Mia Y. Kawaida 1, Brandon I. Smith 1, Sarah A. Reed 2, Steven A. Zinn 2, Kristen E. Govoni 2
1University of Connecticut, 2Dept. of Animal Science, University of Connecticut

1:15 p.m.  PSXV-13  Relationship Between Velocity and Temporal Variables in the Akhal-teke Glide
Molly Nicodemus 1, Molly Friend 2, Jeannette Beranger 3
1Animal & Dairy Sciences, Mississippi State University, 2Mississippi State University, 3The Livestock Conservancy

1:15 p.m.  PSXV-21  Transcriptome analysis of chicken reveals the impact of Herpesvirus of Turkeys on bursa RNA expression in Marek’s disease virus infections
Junjian Wang 1, Julie Hicks 1, Jicai Jiang 1, Hsiao-Ching Liu 1
1North Carolina State University

CSAS Symposium II: Bison Ecological Recovery and Production Perspectives
Chair: Oscar Lopez-Campos, Agriculture and Agri Food Canada, Science and Technology Branch; Carl Julien, CRSAD
1:30 PM - 5:00 PM
206 A/B

1:30 p.m.  CSAS Symposium II Introduction
2:10 p.m. 175 Persistence and Serendipity: The Ecological Recovery of North American Bison Populations
Todd K. Shury
Parks Canada Agency

2:45 p.m. 171 Sex-sorted Sperm Used for Fixed-time Artificial Insemination and in vitro Fertilization in Wood Bison
Eric M. Zwiefelhofer, Gregg P. Adams, Miranda L. Zwiefelhofer, Paula Mackie, Gabriela F. Mastromonaco
Toronto Zoo and University of Saskatchewan, University of Saskatchewan, Toronto Zoo

3:20 p.m. CSAS Symposium II Break

3:35 p.m. 173 The North American Bison Management System: Reintroduction of a Species with Ecological, Economic, and Cultural Roles in a Changing Climate
Jeff M. Martin, Kristi M. Cammack
South Dakota State University

4:10 p.m. 172 Developing Genomic Tools for Bison
Michelle Miller
Neogen Canada

4:45 p.m. CSAS Symposium II Q&A

Forages and Pastures Symposium II: Fiber Utilization and Cell Wall Constituents
Chair: Samuel Wyffels, Northern Agriculture Research Center
1:30 PM - 5:00 PM
205 A/B

1:30 p.m. Forages and Pastures Symposium II Introduction

1:35 p.m. 200 Forage Cell Wall Organization, Complexes, and Components
George C. Fahey
University of Illinois at Urbana-Champaign

2:20 p.m. 202 An Update on in Vitro and in Situ Experimental Techniques for Approximation of Ruminal Fiber Degradation
Jamie L. Foster
Texas A&M AgriLife Research

3:05 p.m. Forages and Pastures Symposium II Break

3:15 p.m. 201 Forage Biodegradation: Advances in Ruminal Microbial Ecology
Todd R. Callaway, Jefferson M. Lourenco, Robert Lawton Stewart, W. Brandon Smith
University of Georgia, Auburn University
4:00 p.m. 199 Revisiting Mechanisms, Methods, and Models for Altering Cell Wall Utilization for Ruminants
Luis O. Tedeschi 1, Ricardo A. Vieira 2
1Texas A&M University, 2Laboratório de Zootecnia, Universidade Estadual do Norte Fluminense (UENF)

4:45 p.m. Forages and Pastures Symposium II Q&A

Extension Education
Chair: James Oltjen, University of California, Davis
2:00 PM - 3:05 PM
207 A/B

2:00 p.m. Extension Education Introduction

2:05 p.m. 176 Costs for Supplementing Small Ruminants Under the Various Grazing-based Production Systems
Uma Karki 1, Bhuwan Shrestha 1, Santoshi Chaudhary 1, Anand Tiwari 1, Lila B. Karki 2
1Tuskegee University, 2University of Maryland Eastern Shore

2:20 p.m. 178 Impacts of an Online Extension Initiative on Adoption of Research-based Principles by Beef Stakeholders
Alice P. Brandão 1, Cliff C. Lamb 1, Reinaldo Cooke 2, Ky G. Pohler 1, Kathrin Dunlap 1
1Texas A&M University, 2Department of Animal Science, TAMU

2:35 p.m. 177 Peer Community in Animal Science: A Free Publication Model for Transparent and Open Science
Rafael Muñoz-Tamayo 1, Mohammed Gagaoua 2, Florence Gondret 3, Matthias Hess 4, Diego P. Morgavi 5, I. Anna S. Olsson 6, Masoomeh Taghipoor 1, Luis O. Tedeschi 7, Isabelle Veissier 5
1Université Paris-Saclay, INRAE, AgroParisTech, UMR Modélisation Systémique Appliquée aux Ruminants, 75005, Paris, France, 2Teagasc Food Research Centre, Ashtown, D15 KN3 K Dublin, Ireland, 3PEGASE, INRAE, Institut Agro, 35590 Saint-Gilles, France, 4Department of Animal Science, University of California, 2251 Meyer Hall, Davis, CA 95616, USA., 5Université Clermont Auvergne, INRAE, VetAgro Sup, UMR Herbivores, F-63122 Saint-Genès-Champanelle, France, 6i3S - Instituto de Investigação e Inovação em Saúde, Universidade do Porto, Rua Alfredo Allen 208, 4200-180 Porto, Portugal, 7Texas A&M University

2:50 p.m. 179 Today's Beef Quality Assurance Program: Rancher Involvement and the Future of Developing Sustainability Programs
Sarah C. Klopatek 1, Allison Cantwell 2, Leslie Roche 3, Kim R. Stackhouse-Lawson 4, James W. Oltjen 3
1JBS, 2Institute for Research in the Social Sciences, Colorado State University, Fort Collins, CO, 3University of California, Davis, 4AgNext, Colorado State University
Companion Animal Symposium II: Nutrition and Immunology Applied to Companion Animals
Chair: Amanda Dainton, Freshpet
2:00 PM - 3:30 PM
301 C/D

2:00 p.m.  Companion Animal Symposium II: Nutrition and Immunology Applied to Companion Animals Introduction

2:15 p.m.  133 Overview of the Immune System
Andrew J. Steelman
1
1University of Illinois Departments of Animal Sciences and Nutritional Sciences

2:45 p.m.  134 Ingredients that Modify the Immune System
Elizabeth A. Bobeck
1
1Iowa State University

3:15 p.m.  Companion Animal Symposium II: Nutrition and Immunology Applied to Companion Animals Discussion

Animal Health I
Chair: Jay Johnson, Huvepharma
2:00 PM - 5:15 PM
302A

2:00 p.m.  Animal Health I Introduction

2:05 p.m.  53 The Role of Veterinary Services on Nutrition Schemes, Management, and Health Practices for Sheep and Goats in Rural Ngaka Modiri Molema District Municipality, North West Province of South Africa
Baitsholetsi G. Mokolopi, James W. Oguttu
1
1University of South Africa

2:20 p.m.  52 Can Annual Lespedeza (Kummerowia Stipulacea) Be Used as an Anti-parasitic Hay for Goats?
Jayla Hicks, Brianna Holmes, Gregory Dykes, Nallely Mendez, Ayesha Neha, Arshad Shaik, Sai Chandan Chelkapally, Davia Brown, Jeslyn Crumpler, Niki C. Whitley, Andres A. Pech-Cervantes, Thomas H. Terrill
1Animal Science Program, College of Agriculture, Family Sciences, and Technology, Fort Valley State University, , 2Fort Valley State University

2:35 p.m.  47 Effect of Summer Heat Stress on Internal Parasite Populations in Lebanese Baladi Goats
Samer Murr, Elham Hajj, Khaled Houchaymi, Joan M. Burke, Brenda M. Murdoch, Pauline Y. Aad
1Faculty of Agriculture and Veterinary Sciences, Lebanese University, 2Lebanese Agricultural Research Institute, 3USDA ARS Dale Bumpers Small Farms Research Center, 4University of Idaho, 5Notre Dame University
2:50 p.m.  51  Determining the Best Indicators for Targeted Selective Treatment Against Gastrointestinal Nematodes in Sheep and Goats in Mississippi
Lindsey N. Dearborn 1, Leyla Rios 2, Felipe Torres-Acosta 3
1Animal and Dairy Sciences Department, Mississippi State University, 2Mississippi State University, 3Faculty of Veterinary Medicine at the Universidad Autonoma de Yucatan (UADY)

3:05 p.m.  49  Effects of Dietary Supplementation with Lespedeza on the Semen Quality and Fertility of Male Goats
Rania Heikal 1, Jayla Hicks 2, Bryanna holmes 1, Jalani Brown 1, Gregory Dykes 2, Lauren Wartley 2, Nallely Mendez 2, Ayesha Neha 1, Arshad Shaik 1, Sai Chandan Chelkapally 1, Davia Brown 2, Jeslyn Crumpler 2, Niki C. Whitley 1, Andres A. Pech-Cervantes 1, Tiffany Reese 2, Moges Woldemeskel 3, Thomas H. Terrill 1, Adel R. R. Moawad 1
1Fort Valley State University, 2Animal Science Program, College of Agriculture, Family Sciences, and Technology, Fort Valley State University,, 3Department of Pathology, Tifton Veterinary Diagnostic & Investigational Laboratory, The University of Georgia

3:20 p.m.  50  Influence of Farrowing Assistance Intervals on Piglet, Sows and Workers
Heather N. Vanheeswijk 1, Angela R. Green-Miller 2
1University of Illinois Urbana-Champaign, 2University of Illinois

3:35 p.m.  Animal Health I Break

3:45 p.m.  46  Sulfonation-based Decontamination Alters Biotransformation and Excretion of Deoxynivalenol in Nursery Pigs
Chi Chen 1, Dan Yao 1, Molly L. McGhee 2, Richard Faris 2, Don W. Giesting 2
1University of Minnesota, 2Cargill Animal Nutrition

4:00 p.m.  45  Vaccine Protocol Influences Immune Phenotype of Weaned Beef Calves
Cassidy C. Reddout 1, Janeen L. Salak-Johnson 2, Paul A. Beck 2, Frank White 3
1Oklahoma State University- Dept. of Animal and Food Sciences, 2Oklahoma State University, 3Elanco

4:15 p.m.  44  Evaluation of Prenatal Transportation Stress on Humoral and Cell-mediated Immunity After Modified-live Viral BVDV Vaccination in Brahman Calves
Audrey L. Earnhardt-San 1, Catherine L. Wellman 2, Shollie M. Falkenberg 3, Charles R. Long 4, Ronald D. Randel 5, Thomas H. Welsh 1
1Texas A&M University and AgriLife Research, Department of Animal Science, 2Texas A&M AgriLife Research, 3Auburn University, 4School of Veterinary Medicine and Biomedical Sciences, Texas A&M University, 5Texas A&M AgriLife Research, Overton, TX

4:30 p.m.  48  Supplementation of Condensed Tannins to Beef Heifers During Peripartum Period Affects Coccidia Parasite Load in Dam and Offspring
Stefania Pancini 1, Nicholas W. Dias 1, Guillermo Goncherenko 2, Hannah Varnell 3, Vitor R.G R. G. Mercadante 1
1Virginia Tech, 2Department of Animal and Poultry Sciences, Virginia Tech, 3Large Animal Clinical Sciences, Virginia Tech
4:45 p.m. 43 Establishing Pregnancy Following Artificial Insemination (AI) of Angus Cows: Experience from Fort Valley State University (FVSU)
Adel R. R. Moawad 1, Niki C. Whitley 1, Noble C. Ralph 2
1Fort Valley State University, 2Animal Science Program, College of Agriculture, Family Sciences, and Technology, Fort Valley State University,

5:00 p.m. 56 Diet Supplementation with Saccharomyces Cerevisiae Boulardii Improves Growth, Health, and Fecal Microbiota of Pre-weaned Dairy Calves
Clothilde Villot 1, Lysiane Dunière 1, Marine Gauthier 2, Eric Chevaux 1, Edyta Kowalczuck 3
1Lallemand SAS, 2Lallemand, 3University of Lublin

Poster Session XVI
3:30 PM - 4:30 PM
Exhibit Hall A

3:30 p.m. PSXVI-11 Effects of Yucca Schidigera Extract and Multi-carbohydrase in Different Crude Protein Diets on Growth Performance, Nutrient Digestibility, Carcass Parameters and Noxious Gas Emission in Broilers
Chai Bin Lim 1, Kimoon Kim 2, Olivier Munezero 1, In Ho Kim 3
1Department of Animal Resources Science, Dankook University, 2Chungnam National University, 3Dankook University

3:30 p.m. PSXVI-15 Energy Concentration Prediction Models for Black Solider Fly Larvae Using Chemical Composition
Dong Uk Ha 1, Kwanho Park 2, Beob G. Kim 1
1Konkuk University, 2Rural Development Administration

3:30 p.m. PSXVI-9 Evaluation of Dehydrated Restaurant Food Waste and Treated Rice Straw on Growing and Finishing Pigs
Medhat A. Michael 1
1Egyptian Ministry of Agricultural

3:30 p.m. PSXVI-14 Hindgut Disappearance of Phosphorus in Corn-soybean Meal-based Diets with or Without Inorganic Phosphorus Sources in Twenty-four-kg Pigs
Jongkeon Kim 1, Beob G. Kim 1
1Konkuk University

3:30 p.m. PSXVI-1 Impact of Breed And/or Season on Effectiveness of Anthelmintic Treatment in Weaned Calves
Chloey Guy 1, Jaclyn N. Ketchum 2, Kaitlin M. Epperson 2, Lacey K. Quail 2, Thomas B. Hairgrove 3, Charles R. Long 4, George A. Perry 5
1Texas A&M AgriLife Research Center, Overton, 2Department of Animal Science, Texas A&M University, College Station, TX, 3Texas A&M AgriLife Extension, 4School of Veterinary Medicine and Biomedical Sciences, Texas A&M University, 5Texas A&M AgriLife Research, Overton, TX

3:30 p.m. PSXVI-2 Impacts of Improvest on Primal Yields in Gilt Carcasses
Kimberly A. Vonnahme 1, Debbie Amodie 1, Marnie Mellencamp 1, Lucina Galina 1
1Zoetis
3:30 p.m. PSXVI-3 **Individual Water Use Efficiency in Beef Cattle**
Tylor J. Yost 1, Nathan Blake 1, Matthew Walker 1, Ida Holaskova 1, Jason Hubbart 1, Domingo Mata-Padrino 1, Ibukun M. Ogunade 1, Kelsie Sanders 1, Matthew E. Wilson 1
1West Virginia University

3:30 p.m. PSXVI-10 **Influence of Carbohydrate Rich Co-products and Fiber on Growth Performance and Fat Quality in Finishing Pigs**
Ferial A. Slim 1, Luca Lo Verso 1, Frédéric Guay 2
1Laval University, 2Université Laval

3:30 p.m. PSXVI-12 **Marine Derived Ca-mg Complex Supplementation Enhances the Performance of Sows and Their Litters During Parity 1 to 4**
Chai Bin Lim 1, Kimoon Kim 2, Santi Devi Upadhaya 3, Rudolf H van der Veen 4, In Ho Kim 5
1Department of Animal Resources Science, Dankook University, 2Chungnam National University, 3Dankook University, Cheonan, South Korea, 4Celtic Sea Minerals, Strand Farm, 5Dankook University

3:30 p.m. PSXVI-8 **Marine-derived Ca-mg Complex Influences Serum Metabolites, Colostrum Nutrient Profile, Lipid and Glucose Metabolism-associated Genes Expression, and Stress Hormones in Sows over a Four-parity Period**
Kimoon Kim 1, Chai Bin Lim 2, Santi Devi Upadhaya 3, Rudolf H van der Veen 4, In Ho Kim 5
1Chungnam National University, 2Department of Animal Resources Science, Dankook University, 3Dankook University, Cheonan, South Korea, 4Celtic Sea Minerals, Strand Farm, 5Dankook University

3:30 p.m. PSXVI-4 **Modelling Response to Heat Stress in a Northeastern USA Dairy Facility Using Robotic Voluntary Milking System Data**
Jillian Derjue 1, Breno O. Fragomeni 2
1UConn, 2University of Connecticut

3:30 p.m. PSXVI-5 **Rumen Parameters and Microbial Population Changes in Fattening Holstein Heifers Fed with Nitrate-contaminated Water**
Miriam Guivernau 1, Lourdes Llonch 2, Sonia Marti 2, Marc Viñas 1, Maria Devant 2
1IRTA-Sustainability in Biosystems, 2IRTA, Ruminant Production

3:30 p.m. PSXVI-6 **Ruminal Dry Matter Disappearance, Methane Production and Fermentation Parameters as Affected by Fat and Protein Concentration in By-product Supplemented Grass Hay-based Diets**
Paul Tamayao 1, Kim H. Ominski 1, Sidonie P. Robinson 1, Karin Wittenberg 1, Gary Crow 1, Emma J. J. McGeough 1
1University of Manitoba

3:30 p.m. PSXVI-13 **Standardized Ileal Digestibility of Amino Acids in Fish Meal, Defatted Black Soldier Fly Larva Meal and Adult Black Soldier Fly Fed to Pigs**
Jongkeon Kim 1, Sang Yun Ji 2, Beob G. Kim 1
1Konkuk University, 2Rural Development Administration

3:30 p.m. PSXVI-16 **Standardized Total Tract Digestibility of Phosphorus in Black Soldier Fly Larvae Fed to Pigs**
Dong Uk Ha 1, Kwanho Park 2, Beob G. Kim 1
1Konkuk University, 2Rural Development Administration
3:30 p.m. PSXVI-7  Sustainability Index Approach of the Brazilian Pampa Biome
LUIZ QUEIROZ FILHO ¹, Claus Kêbrich Grueble ², JULIO BARCELLOS ³
¹NESPro-UFRGS, ²Faculty of Veterinary and Animal Sciences-UC, ³Dep. Animal Production - NESPro-UFRGS

Thursday, June 30, 2022

Horse Species Symposium:
The Mechanisms for Maternal Recognition of Pregnancy in Horses
Chair: Sarah Reed, Dept. of Animal Science, University of Connecticut
8:30 AM - 10:15 AM
206 A/B

8:30 a.m.   Horse Species Symposium Introduction

8:35 a.m.  222 Maternal Recognition of Pregnancy in the Mare: What is Needed to Make Progress in Our Understanding of This Complex Issue
Claudia Klein ¹
¹Friedrich-Loeffler-Institute

9:15 a.m.  221 Putative Gene Regulators in the Equine Endometrium, Corpus Luteum and Embryo During Early Pregnancy in the Horse
Mariana Diel de Amorim ¹
¹Cornell University

9:55 a.m.   Horse Species Symposium Discussion

Animal Breeding and Genetics Symposium III: Selection Signatures in Livestock Genome
Chair: Breno Fragomeni, University of Connecticut
8:30 AM - 11:00 AM
301 A/B

8:30 a.m.   Animal Breeding and Genetics Symposium III Introduction

8:35 a.m.  30 Origins, Timing and Introgression of Domestic Geese Revealed by Whole Genome Data
Lujiang Qu ¹, Junhui Wen ¹
¹College of Animal Science and Technology, China Agricultural University

9:05 a.m.  29 Mapping Recent and Ongoing Polygenic Selection in Beef Cattle Populations
Troy N. Rowan ¹, Robert Schnabel ², Jared E. Decker ²
¹University of Tennessee - Knoxville, ²University of Missouri

9:35 a.m.   Animal Breeding and Genetics Symposium III Break
9:45 a.m.  27  Evaluating the Functional Differences at Genome, Transcriptome and Methylome Level Between ARS-UCD1.2 and UMD 3.1 Bovine Reference Genomes
Angela Cánovas 1, Pablo A.S Fonseca 2, Stephanie D. McKay 3, Juan F. F. Medrano 4
1Centre for Genetic Improvement of Livestock, Department of Animal Biosciences, University of Guelph, 50 Stone Rd E, N1G 1Y2, ON, Canada, 2Department of Animal Biosciences, Centre for Genetic Improvement of Livestock, University of Guelph, N1G 2W1, Guelph, Ontario, Canada., 3Department of Animal and Veterinary Sciences, University of Vermont, United States of America., 4Department of Animal Science, University of California-Davis, 95616, Davis, California, United States of America.

10:15 a.m.  28  Problematizing Selection Mapping from an Animal Science Perspective
Martin Johnsson 1
1Department of Animal Breeding and Genetics, Swedish University of Agricultural Sciences

10:45 a.m.  Animal Breeding and Genetics Symposium III Q&A

8:30 a.m.  Animal Health II Introduction

8:35 a.m.  7  Characterization of Feeder Cattle Behavior Using an Integrated Machine Vision Learning System
Jesse Robbins 1, Polina Demochkina 2, Josh Szasz 3, Tony C. Bryant 3, Ross Mauck 1, Tim Robertson 1, Andrew McKenzie 1
1Precision Livestock Technologies, 2HSE University, 3Five Rivers Cattle Feeding

8:50 a.m.  54  The Effect of Supplementing CLOSTAT 500 (Bacillus Subtilis PB6) to Yearling Steers in a Commercial Feedyard on Health, Salmonella Spp. Prevalence, Feedlot Performance and Carcass Characteristics
Sara J. Trojan 1, Paul R. Broadway 2, Nicole C. Burdick Sanchez 2, Jeffery A. Carroll 2, Kristin E. Hales 3, Alyssa B. Word 4, Kendall J. Karr 4, Ben P. Holland 5, Guy Ellis 4, Casey Maxwell 5, Landon Canterbury 6, Tyler Leonhard 6, Doug LaFleur 7, Jerilyn Hergenreder 7
1Peak Beef Cattle Nutrition and Management Consulting LLC, 2USDA-ARS, Livestock Issues Research Unit, 3Texas Tech University, 4Cactus Research, 5Cactus Feeders, 6Kemin Industries, 7Kemin Industries Inc.

9:05 a.m.  57  Evaluation of Virginiamycin Inclusion in the Diets of Feedlot Steers: Interplay Between Rumen Ph and Liver Health
Madeline E. Rivera 1, Luiz Fernando Dias Batista 1, Luis O. Tedeschi 1
1Texas A&M University
9:20 a.m.  63  Impact of Supplementing Rumen-protected Methionine During the Periconceptional Period in Fetal and Postnatal Growth in Beef Cattle  
Daniella C. Heredia 1, Federico Tarnonsky 1, Oscar A. A. Ojeda 1, Camila Santos Rojas 1, Ignacio Fernandez Marenchino 1, Daniel L. Luchini 2, Peter J. Hansen 1, Nicolas DiLorenzo 3, Angela M. Gonella 1  
1University of Florida, 2Adisseo, 3Department of Animal Sciences, North Florida Research and Education Center (NFREC), University of Florida, Marianna, FL

9:35 a.m.  59  Effects of Feeding Nutragen on Clinical Signs and Leukocytes in Calves Following Natural Exposure to Bovine Viral Diarrhea Virus and Subsequent Mannheimia Haemolytica Infection  
Jazmin A. Markey 1, Wendy Gong 1, Kasi N. Schneid 1, Avianna A. Liuzzo 1, Garrett Farran 1, Jennifer Rudd 2, Tim Snider 2, Marie Montelongo 2, Brooke Humphrey 3, James D. Chapman 4, Evin D. Sharman 5, Miriam Garcia 5, Ryan R. Reuter 1, Paul A. Beck 1, Andrew P. Foote 1, Kelsey Bruno 1, Blake K. Wilson 1  
1Oklahoma State University, 2Oklahoma State University College of Veterinary Medicine, 3Phibro Animal Health Corporations, 4Phibro Animal Health Corporation, 5Phibro Animal Health

9:50 a.m.  Animal Health II Break

10:00 a.m.  60  Occurrence of Mycotoxins in US Corn Gluten Products and Wheat Middlings  
Paige N. Gott 1, Erin F. Schwandt 1, Lan Zheng 1, Chasity M. Pender 1, Ursula Hofstetter-Schähs 1, April W. Levy 1  
1DSM Nutritional Products

10:15 a.m.  61  Mycotoxin Trends in US Corn Grain and Corn Distiller’s Dried Grains with Solubles  
Paige N. Gott 1, Lan Zheng 1, Erin F. Schwandt 1, Chasity M. Pender 1, Ursula Hofstetter-Schähs 1, April W. Levy 1  
1DSM Nutritional Products

10:30 a.m.  62  Impact of Feeding Male Goats with L-carnitine on Viability of Their Semen Stored at 4 °C for 72 Hours  
Bryanna Holmes 1, Jalani Brown 1, Lazar Hunter 2, Joshua Woodard 1, Allana Johnson 2, Miller Schautson 1, Brou Kouakou 1, Adel R. R. Moawad 1  
1Fort Valley State University, 2Animal Science Program, College of Agriculture, Family Sciences, and Technology, Fort Valley State University,

10:45 a.m.  64  Effects of L-carnitine Dietary Supplementation on the Quality of Buck Semen Collected During Non-breeding Season  
Jalani Brown 1, Bryanna Holmes 1, Lazar Hunter 2, Joshua Woodard 1, Allana Johnson 2, Ma Xiaoling 2, Miller Schautson 1, Brou Kouakou 1, Adel R. R. Moawad 1  
1Fort Valley State University, 2Animal Science Program, College of Agriculture, Family Sciences, and Technology, Fort Valley State University,
8:30 a.m.  Teaching/Undergraduate and Graduate Education Introduction

8:35 a.m.  381  Awardee Talk: Increasing the Sustainability of Beef Cattle Production Through Internationalization
Luis O. Tedeschi ¹
¹Texas A&M University

9:05 a.m.  382  Essential Skills for Future Equine Sports Rehabilitation Careers
Sarah A. Reed ¹
¹Dept. of Animal Science, University of Connecticut

9:20 a.m.  385  Investigating Inclusiveness Within the Department of Animal Science
Kelsi Carlson ¹, Jennifer M. Bundy ¹, Anna K. Johnson ¹, Scott Smalley ¹, Michael J. Martin ¹
¹Iowa State University

9:35 a.m.  386  Reflection on Reflections: How Students Experience Reflection Assignments?
Sushil Paudyal ¹, William Walker ¹, Kao Sean ¹, Jeffrey Wiegert ¹, Kathrin Dunlap ¹, Jonan Donaldson ¹
¹Texas A&M University

9:50 a.m.  Teaching/Undergraduate and Graduate Education Break

10:00 a.m.  380  Awardee Talk: Deer Eat Birds and Other Revelations: Teaching a Changing Demographic of Animal Science Student
Jason M. Scheffler ¹
¹University of Florida

10:30 a.m.  383  Scientific Training Programs for Undergraduate and Graduate Students: applied Animal and Food Science
Charles W. Starkey ¹, Jessica D. Starkey ²
¹Auburn University, ²Department of Poultry Science, Auburn University

10:45 a.m.  384  Scientific Training Programs for Undergraduate and Graduate Students: Exposure to Fundamental Science
Jessica D. Starkey ¹, Charles W. Starkey ²
¹Department of Poultry Science, Auburn University, ²Auburn University
8:30 a.m.  Production, Management and Environment Introduction

8:35 a.m.  305  Awardee Talk: Application of On-Animal Sensors and Precision Livestock Management on Extensive Cattle and Sheep Ranches
Derek W. Bailey 1, Mark G. Trotter 2, Colin T. Tobin 3, Kelsey Nelson 1, Caroline Wade 1, Cory Oltjen 4, Milton G. Thomas 4, Jennifer A. Hernandez Gifford 1
1New Mexico State University, 2CQUniversity, 3North Dakota State University, 4Colorado State University

9:05 a.m.  310  Effects of Stair Step Strategy and Immunomodulatory Feed Ingredient Supplementation on Thermoregulation, Growth, and Reproduction of Grazing Bos Indicus-influenced Beef Heifers
Vinicius de Souza Izquierdo 1, Joao Vendramini 2, Philipe Moriel 2
1University of Florida - Range Cattle Research & Education Center, 2University of Florida

9:20 a.m.  311  Administering a Bovine Appeasing Substance to Beef Heifers During an Estrous Synchronization Protocol and Its Impacts on Temperament and Pregnancy Rate
Nicholas W. Dias 1, Stefania Pancini 1, Guillermo Goncharenko 2, John Currin 1, Sherrie Clark-Deener 1, Jamie L. Stewart 1, Reinaldo Cooke 3, Vitor R G. Mercadante 4
1Virginia Tech, 2Department of Animal and Poultry Sciences, Virginia Tech, 3Department of Animal Science, TAMU, 4Virginia Tech - School of Animal Sciences, Large Animal Clinical Sciences

9:35 a.m.  306  Cattle Performance and Forage Nutrients While Grazing an Integrated Crop-livestock System Compared with Grass Pasture in the Northern Great Plains
Rachael G. Christensen 1, Scott L. Kronberg 1, John R. Hendrickson 1, David W. Archer 1, Mark A. Liebig 1
1USDA-ARS

9:50 a.m.  307  Effects of Incorporating Malted Barley in a Finishing Ration on Intake, Performance, and Enteric Methane Emission of Beef Steers
Matthew R. Beck 1, Jarret A. Proctor 2, Zachery A. Kasuske 1, Jason K. Smith 3, Vinicius N. Gouvea 4, Catherine Lockard 5, Byeng Min 6, David Brauer 1
1USDA-ARS, 2Texas A&M University, 3Texas A&M AgriLife Extension, 4Texas A&M AgriLife Research, 5Friesen, 6Tuskegee University

10:05 a.m.  Production, Management and Environment Break

10:15 a.m.  314  Steer Production Performance and Enteric Gas Emissions Associated with Free-choice Mineral Supplement Infused with Varying Levels of Garlic Powder
Oluwatobi Oyedeji 1, Herbert A. Lardner 2, Iris Cheang 3, Hushton Block 4, Obioha N. Durunna 1
1Department of Applied Research, Lakeland College Vermilion, AB, Canada T9X 1K5, 2Department of Animal and Poultry Science, University of Saskatchewan, 3University of Saskatchewan, 4Agriculture and Agri-Food Canada, Lacombe, AB, Canada, T4L 1V7
10:30 a.m.  308  **Evaluation of Implants and Precision Supplementation on Growth and Muscle Accretion in Beef Steers Post Weaning**  
Joshua L. Jacobs 1, Maslyn A. Greene 1, Aliute Udoka 1, Matt J. Hersom 1, John G. Andrae 1, Susan K. Duckett 1  
1Clemson University  

10:45 a.m.  309  **Achieving Heavier Market Weights, with Similar Feed Efficiency, in Gilts Administered Improvest**  
Kimberly A. Vonnahme 1, Debbie Amodie 1, Roy Edler 2, Marnie Mellencamp 1, Lucina Galina 1  
1Zoetis, 2Pipestone Veterinary Services  

11:00 a.m.  313  **Estimating Body Condition Score of Dairy Cows from Color Depth Images Using a Mobile Device**  
Ligia Cunha Moreira 1, Tiago Bresolin 1, Joao R. R. Dorea 2, Guilherme J. M. Rosa 2  
1Department of Animal and Dairy sciences, University of Wisconsin-Madison, 2University of Wisconsin-Madison  

11:15 a.m.  312  **Characterizing Riding Tendencies of Owners, Managers, or Riders of Indoor Arena Through an Anonymous Survey**  
Staci McGill 1, Morgan Hayes 1, Bob Coleman 1  
1University of Kentucky