

2022

INTERNATIONAL POULTRY SCIENTIFIC FORUM



JAN. 24 - 25

2022 INTERNATIONAL POULTRY SCIENTIFIC FORUM

Concurrent Meeting of

The Southern Poultry Science Society 43rd Annual Meeting

The Southern Conference on Avian Diseases 63rd Annual Meeting

January 24-25, 2022

Program Summary

MONDAY SESSIONS

| JANUARY 24 | ROOM NUMBER | TIME | PAGE NUMBER |
|---|--------------------|---|--------------------|
| Physiology, Endocrinology, Reproduction I | B-311 | 7:30 a.m. – 10:00 a.m. (Dr. Sami Dridi, UARK) | 1 |
| Teaching, Pedagogy, Extension I | B-311 | 10:15 a.m. – 11:00 a.m. (Dr. Jessica Wells, MSSTATE) | 5 |
| Processing & Products I | B-311 | 11:00 a.m. – 4:00 p.m. (Dr. Charles Starkey, Auburn; Dr. Li Zhang, MSSTATE) | 6 |
| Pathology I | B-312 | 8:00 a.m. – 10:00 a.m. (Dr. Valerie Marciano, Elanco) | 9 |
| Pathology II | B-312 | 10:15 a.m. – Noon (Dr. Kaytee McCullough, UGA) | 10 |
| SCAD I | B-312 | 1:00 p.m. – 4:00 p.m. (Dr. Christine Vuong, UARK) | 11 |
| Metabolism & Nutrition I | B-313 | 7:30 a.m. – 10:00 a.m. Dr. Wilmer Pacheco, Auburn) | 13 |
| Metabolism & Nutrition II | B-313 | 10:15 a.m. – Noon (Dr. Tayo Adedokun, U-KY) | 14 |
| Metabolism & Nutrition III | B-313 | 1:00 p.m. – 2:15 p.m. (Dr. Samuel Rochell, UARK) | 15 |
| Metabolism & Nutrition IV | B-313 | 2:15 p.m. – 4:00 p.m. (Dr. Kelley Wamsley, MSSTATE) | 16 |
| Metabolism & Nutrition V | B-314 | 7:30 a.m. – 9:45 a.m. (Dr. Woo Kyun Kim, UGA) | 18 |
| Metabolism & Nutrition VI | B-314 | 10:00 a.m. – Noon (Dr. John Boney, Penn State) | 19 |
| Metabolism & Nutrition VII | B-314 | 1:00 p.m. – 2:30 p.m. (Dr. Roshan Adhikari, CJ America) | 21 |
| Metabolism & Nutrition VIII | B-314 | 2:30 p.m. – 4:00 p.m. (Dr. Katie Hilton, Danisco Animal Nutrition (IFF)) | 22 |
| Environment/Management I | B-315 | 7:30 a.m. – 9:45 a.m. (Dr. Lilong Chai, UGA) | 23 |
| Environment/Management II | B-315 | 10:00 a.m. – Noon (Dr. Zachary Williams, MSU) | 24 |
| Environment/Management III | B-315 | 1:00 p.m. – 4:00 p.m. (Dr. Ahmed Ali, Clemson; Dr. Chongxiao (Sean) Chen, NCSU) | 25 |
| POSTERS: (Dr. Anuraj Sukumaran, MSSTATE; Dr. Sara Orlowski, UARK) | | | |
| Posters Displayed | Foyer. | 1:00 p.m. – 6:00 p.m. | 47 |
| Poster Reception (Students required) | | 4:00 p.m. – 6:00 p.m. | |

TUESDAY SESSIONS

| ROOM JANUARY 25 | TIME NUMBER | PAGE | NUMBER |
|--|------------------------|---|---------------|
| Posters Displayed | B-313 Foyer | 8:00 a.m. — Noon | 22 |
| Physiology, Endocrinology, Reproduction II and Metabolism & Nutrition IX | B-311 | 7:45 a.m. — 11:00 a.m. (Dr. Rocio Crespo, NCSU; Dr. Vivek Kuttappan, Novus International) | 27 |
| SCAD II | B-312 | 8:00 a.m. — 9:30 a.m. (Dr. Andrea Zedek, (Zedek Poultry Consulting) | 32 |
| SCAD III | B-312 | 9:45 a.m. -- 10:45 a.m. (Dr. Karen Grogan, UGA) | 33 |
| Metabolism & Nutrition X; Processing and Products II; Teaching, Pedagogy, Extension II | B-313 | 7:30 a.m. - Noon (Dr. Ashley Wagner, Probiotech Int'l; Dr. Carrie Walk, DSM Nutritional Products) | 35 |
| Metabolism & Nutrition XI | B314 | 7:30 a.m. — Noon (Dr. Rosana Hira, TAMU; Dr. A. Bello, Danisco Animal Nutrition (IFF)) | 40 |
| Metabolism & Nutrition XII | B315 | 7:30 a. m. — Noon (Dr. Michael Barnas, AHPharma; Dr. April Levy, DSM Nutritional Products | 43 |
| Milton L. Dendy Keynote Lecture | B-313 | 11:00 a.m. — Noon (Dr. Christine Vuong, UARK) | 31 |
| SCAD Business Meeting | B-312 | Noon — 1:00 p.m. | |
| SPSS Business Meeting | B-314 | Noon — 1:00 p.m. | |

Officers of the SPSS 2021-2022

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| President: | Dr. Joey Bray, SFAU |
| First VP | Dr. Curran Gehring, Tucker Milling |
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| Phone: | 662.325.3416 |
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| Secretary / Treasurer | Dr. Susan M. Williams, UGA Department of Population Health/PDRC University of Georgia 953 College Station Road Athens, Georgia 30602-4875 |
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Physiology, Endocrinology and Reproduction: Layer or Broiler Breeders

Moderator: Dr. Sami Dridi, U. of Arkansas

Room Number: B311

Monday, January 24, 2022

7:30 AM M1

Cold storage after egg inoculation enhances *Campylobacter* recovery from embryos and egg contents thru day 5 of incubation

Caitlin Harris^{*1,2GS}, Lydia Bartenfeld Josselson², Richard Buhr^{1,2} ¹*University of Georgia*, ²*USDA-ARS, US National Poultry Research Center*

7:45 AM M2

Effects of cumulative nutrient intake and growth parameters during rearing on the reproductive performance of broiler breeders under commercial conditions

Maria Alfaro-Wisaquillo^{*1GS}, Gustavo Quintana-Ospina¹, Luis Bernal-Arango², Juan Ruiz-Ramirez², Gustavo Martínez-Bernal², Edgar Oviedo-Rondón¹ ¹*North Carolina State University*, ²*Grupo BIOS Inc.*

8:00 AM M3

The differential effect of dietary sodium octanoate doses on ghrelin concentration and feed intake in chickens and turkeys.

Nurudeen Taofeek^{*GS}, Daija Thompson, Kiah Blake, Jorge Vizcarra, Kylan Mckee, Louis Shackelford, Makayla Rushing, Martha Verghese, Micheal Baker, Selena Lopez *Alabama A & M University*

Physiology, Endocrinology and Reproduction: Turkeys

Moderator: Dr. Sami Dridi, U. of Arkansas

Room Number: B311

Monday, January 24, 2022

8:15 AM M4

The Turkey Elicits a Dysregulated Immune Response to *Histomonas meleagridis* Infection
Katherine Cupo^{*165}, Elle Chadwick², Oluwamuyiwa (Gabriel) Akerele³, Robert Beckstead⁴,
Ramesh Selvaraj³, Chongxiao (Sean) Chen¹ ¹*North Carolina State University*, ²*Biomin*,
³*University of Georgia*, ⁴*Ceva*

Physiology, Endocrinology and Reproduction: Broilers

Moderator: Dr. Sami Dridi, U. of Arkansas

Room Number: B311

Monday, January 24, 2022

8:30 AM M5

Effect of cyclic heat stress on gut barrier integrity, performance and processing traits, and feeding-related hypothalamic neuropeptides of three broiler lines and their ancestor junglefowl
Giorgio Brugaletta^{*1,2GS}, Travis Tabler², Elizabeth Greene², Nedra Abdelli³, Alison Ramser², Federico Sirri¹, Sara Orłowski², Sami Dridi² ¹*Department of Agricultural and Food Sciences, Alma Mater Studiorum — University of Bologna*, ²*Center of Excellence for Poultry Science, University of Arkansas*, ³*Animal Nutrition and Welfare Service, Department of Animal and Food Sciences, Universitat Autònoma de Barcelona*

8:45 AM M6

Effects of dietary bacitracin or *Bacillus subtilis* on the woody breast myopathy-associated gut microbiota of *Eimeria* spp. challenged and unchallenged broilers

Linan Jia^{*1GS}, Xue Zhang², Xiaofei Li³, Chuan-Yu Hsu⁴, M. Schilling², Aaron Kiess⁵, E. Peebles¹, Li Zhang¹ ¹*Department of Poultry Science, Mississippi State University*, ²*Department of Food Science, Nutrition and Health Promotion, Mississippi State University*, ³*Department of Agricultural Economics, Mississippi State University*, ⁴*Institute for Genomics, Biocomputing, and Biotechnology, Mississippi State University*, ⁵*Prestage Department of Poultry Science, North Carolina State University*

9:00 AM M7

Effects of antibiotic growth promoters on amino acid partitioning and intestinal physiology in commercial broilers

Charles Meeks^{*GS}, Laura Ellestad *University of Georgia*

9:15 AM M8

The effects of triiodothyronine in avian muscle cells may be regulated through the insulin-like growth factor binding proteins

Lauren Vaccaro^{*GS}, Addison Smith, Kyle Herring, Laura Ellestad *University of Georgia*

Physiology, Endocrinology and Reproduction: Laying Hens

Moderator: Dr. Sami Dridi, U. of Arkansas

Room Number: B311

Monday, January 24, 2022

9:30 AM M9

Circadian expression of calcification-related genes in the eggshell gland of commercial laying hens

Micaela Sinclair-Black*^{GS}, Lyssa Blair, Laura Ellestad *Department of Poultry Science, University of Georgia*

9:45 AM M10

Effects of the in ovo injection of an Escherichia coli vaccine on the hatchability and characteristics of commercial layer chicks

L. Lindsey*^{1GS}, J. Evans², K. Elliott², S. Fatemi¹, A. Mousstaaid¹, P. Gerard³, E. Peebles¹

¹*Department of Poultry Science, Mississippi State University*, ²*USDA-ARS, Poultry Research Unit*,

³*School of Mathematical and Statistical Sciences, Clemson University*

10:00 AM Break

Teaching, Pedagogy, Extension

Moderator: Dr. Jessica Wells, Mississippi State

Room Number: B311

Monday, January 24, 2022

10:15 AM M12

Assessment of retention trends in the college of agriculture and life sciences to determine possible internal recruitment efforts for poultry science departments

Peyton Taylor^{*GS}, Ryan Walker, Kelley Wamsley, Jessica Wells *Mississippi State University*

10:30 AM M13

Assessment of current hatch-out program curriculum implemented in K-12 for Mississippi

Marissa Powell^{*GS}, Ryan Walker, Kelley Wamsley, Jessica Wells *Mississippi State University*

10:45 AM M14

The development, implementation, and evaluation of the Hybrid-Online Hatch-Out Program

Tannah Christensen^{*1GS}, Donna Peterson¹, Jessica Wells², Mariah Morgan¹, Marina Denny¹

¹*School of Human Sciences, Mississippi State University*, ²*Department of Poultry Science, Mississippi State University*

Processing and Products

Moderators: Dr. Charles Starkey, Auburn and Dr. Li Zhang, MSSTATE

Room Number: B311

Monday, January 24, 2022

11:00 AM M15

Effects of Syngenta Enogen® corn on broiler breast objective and subjective color and stability measurements

Morgan Gravely*^{1GS}, Oscar Martinez², Hanna Alcocer¹, Xiaoxing Xu¹, Zhijun Wang¹, Alexander Stelzleni¹, Harshavardhan Thippareddi², Woo Kim², John Gonzalez¹ ¹*Department of Animal and Dairy Science, University of Georgia*, ²*Department of Poultry Science, University of Georgia*

11:15 AM M16

Analyzing Salmonella serovar dynamics using selective pre-enrichment conditions

Surendra Rasamsetti*^{1GS}, Nikki Shariat¹, Mark Berrang², Nelson A. Cox² ¹*Department of Population Health, Poultry Diagnostic and Research Center, University of Georgia*, ²*USDA-Agricultural Research Service, U.S. National Poultry Research Center*

11:30 AM M17

Quantification of Campylobacter jejuni, coli and lari in poultry post-chill whole bird carcass rinses utilizing a shortened enrichment time and PCR

Aaron Bodie*^{1GS}, Dana Dittoe¹, Savannah Applegate², Tyler Stephens², Steven Ricke¹ ¹*University of Wisconsin*, ²*Hygiene*

11:45 AM M18

Reduction in Campylobacter jejuni colonization in the ceca by coarse spray of an inactivated vaccine in broilers.

Charles Hofacre*¹, Roy Berghaus², Bereket Zekarias³, Sam Christenberry³, Hector Cervantes³, Luis Gomez³, Peter Winter³, Karen Brown³, Matthew Jones¹, Jennie Baxter¹ ¹*Southern Poultry Research Group, Inc.*, ²*The University of Georgia*, ³*Phibro Animal Health*

Monday, January 24, 2022

12:00 PM Lunch

Processing and Products

Moderators: Dr. Charles Starkey, Auburn and Dr. Li Zhang, MSSTATE

Room Number: B311

Monday, January 24, 2022

1:00 PM M19

Isolation and characterization of *Campylobacter jejuni* from 'no antibiotics ever' raised broilers
Sabin Poudel*^{1GS}, Anuraj Sukumaran¹, Pratima Adhikari¹, Aaron Kiess², Li Zhang¹ ¹*Department of Poultry Science, Mississippi State University*, ²*Prestige Department of Poultry Science, North Carolina State University*

1:15 PM M20

Effect of exsanguination method on rate of blood loss and total blood loss in broilers
Rachel Osborne*^{1GS}, Emily Baethke¹, Caitlin Harris^{1,2}, Richard Buhr², Brian Kiepper¹
¹*Department of Poultry Science, University of Georgia*, ²*Poultry Microbiological Safety and Processing Research Unit, U.S. National Poultry Research Center, Richard B. Russell Agricultural Research Center, USDA-ARS*

1:30 PM M21

Meat quality of broiler chickens processed using electrical and controlled atmosphere stunning systems
Montana Riggs*^{GS}, Rüdiger Hauck, Bethany Baker-Cook, Rachel Osborne, Amrit Pal, Maria Bethonico Terra, Gracie Sims, Andrea Urrutia, Leticia Orellana Galindo, Marco Reina, Dianna Bourassa *Auburn University*

1:45 PM M22

Textural characteristics of raw pet treats developed from broiler chicken wing tips
Gerardo A. Abascal-Ponciano*^{1GS}, Jorge Sandoval¹, John Rogers¹, Jorge Romero¹, Justin Dunavant¹, Marc Presume¹, Said Herrera¹, Josh Renew¹, Jorge Banegas¹, Christopher Almendares¹, Diego Ventura¹, Luis Guzman¹, Tristan Reyes², Madison Wagoner², Robert Mason³, Eric Altom³, Jason Sawyer², Jessica Starkey¹, Charles Starkey¹ ¹*Auburn University Department of Poultry Science*, ²*Auburn University Department of Animal Science*, ³*Balchem Corporation*

2:00 PM M23

Evaluation of textural characteristics of raw pet treats generated from mixtures of broiler liver and heart
Jorge Banegas*^{1GS}, Marc Presume¹, Rigo Soler¹, Jorge Sandoval¹, Justin Dunavant¹, Jorge Romero¹, Luis Avila¹, Moses Chilenje¹, Catherine Odom¹, Laura Garner¹, Amit Morey¹, Robert Mason², Eric Altom², Charles Starkey¹ ¹*Department of Poultry Science, Auburn University*, ²*Balchem Animal Nutrition and Health, Balchem Corp.*

2:15 PM M24

Texture analysis of pet treats generated from pressure cooked broiler wing tips
John Rogers*^{1UG}, Jorge Romero¹, Justin Dunavant¹, Marc Presume¹, Said Herrera¹, Joshua Renew¹, Jorge Sandoval¹, Jorge Banegas¹, Gerardo Abascal-Ponciano¹, Christopher Almendares¹, Diego Ventura¹, Luis Guzman¹, Tristan Reyes², Madison Wagoner², Robert Mason³, Eric Altom³, Jason Sawyer², Jessica Starkey¹, Charles Starkey¹ ¹*Auburn University Department of Poultry Science*, ²*Auburn University Department of Animal Science*, ³*Balchem Animal Nutrition and Health, Balchem Corp., New Hampton, NY, USA*

2:30 PM M25

Evaluation of textural characteristics of dehydrated pet treats generated using broiler wing tips and a structure forming agent
Catherine Walls*^{1UG}, John Rogers¹, Jorge Romero¹, Justin Dunavant¹, Marc Presume¹, Said Herrera¹, Josh Renew¹, Jorge Sandoval¹, Jorge Banegas¹, Gerardo Abascal-Ponciano¹, Christopher Almendares¹, Diego Ventura¹, Luis Guzman¹, Tristan Reyes², Madison Wagoner², Robert Mason³, Eric Altom³, Jason Sawyer², Jessica Starkey¹, Charles Starkey¹ ¹*Auburn University Department of Poultry Science*, ²*Auburn University Department of Animal Science*, ³*Balchem Animal Nutrition and Health, Balchem Corp.*

2:45 PM M26

Evaluation of textural characteristics of dehydrated pet treats generated from chicken liver and heart combinations

Said Herrera*^{1GS}, Marc Pr sum ¹, Rigo Soler¹, Jorge Romero¹, Justin Dunavant¹, Moses Chilenje¹, Jorge Sandoval¹, Luis Avila¹, Catherine Odom¹, Laura Grner¹, Amit Morey¹, Robert Mason², Eric Altom², Charles Starkey¹ ¹*Auburn University Department of Poultry Science*, ²*Balchem Corporation*

3:00 PM M27

Analysis of instrumental color over time of raw pet treats generated from broiler chicken wing tips

Jorge Romero*^{1GS}, Justin Dunavant¹, John Rogers¹, Cristopher Almendares¹, Marc Presume¹, Said Herrera¹, Josh Renew¹, Jorge Sandoval¹, Jorge Banegas¹, Gerardo Abascal-Ponciano¹, Diego Ventura¹, Luis Guzman¹, Tristan Reyes², Madison Wagoner², Robert Mason³, Eric Altom³, Jason Sawyer², Jessica Starkey¹, Charles Starkey¹ ¹*Auburn University Department of Poultry Science*, ²*Auburn University Department of Animal Science*, ³*Balchem Animal Nutrition and Health, Balchem Corp.*

3:15 PM M28

Effect of inclusion of a forming agent on chemical analysis of pet treats developed from broiler wing tips

Jorge Sandoval*^{1GS}, Jonh Rogers¹, Jorge Romero¹, Justin Dunavant¹, Marc Presume¹, Said Herrera¹, Josh Renew¹, Jorge Banegas¹, Gerardo Abascal-Ponciano¹, Cristopher Almendares¹, Diego Ventura¹, Luis Guzman¹, Tristan Reyes², Madison Wagoner², Robert Mason³, Eric Altom³, Jason Sawyer², Jessica Starkey¹, Charles Starkey¹ ¹*Auburn University Department of Poultry Science*, ²*Auburn University Department of Animal Science*, ³*Balchem Animal Nutrition and Health, Balchem Corp.*

3:30 PM M29

Analysis of instrumental color over time in pet treats derived from pressure-cooked broiler chicken wing tips

Cristopher Almendares*^{1GS}, Justin Dunavant¹, Jorge Romero¹, John Rogers¹, Marc Presume¹, Said Herrera¹, Josh Renew¹, Jorge Banegas¹, Gerardo Abascal-Ponciano¹, Diego Ventura¹, Jorge Sandoval¹, Luis Guzman¹, Tristan Reyes², Madison Wagoner², Robert Mason³, Eric Altom³, Jason Sawyer³, Jessica Starkey¹, Charles Starkey¹ ¹*Auburn University Department of Poultry Science*, ²*Auburn University Department of Animal Science*, ³*Balchem Animal Nutrition and Health, Balchem Corp.*

3:45 PM M30

Effect of forming agent inclusion on textural profile analysis of pet treats generated from broiler wing tips

Diego Ventura Urbina*^{1UG}, Justin Dunavant¹, Jorge Romero¹, John Rogers¹, Marc Presume¹, Jorge Sandoval¹, Said Herrera¹, Josh Renew¹, Jorge Banegas¹, Gerardo Ponciano Abascal¹, Cristopher Almendares¹, Luis Guzman¹, Tristan Reyes², Madison Wagoner², Robert Mason³, Eric Altom³, Jason Sawyer², Jessica Starkey¹, Charles Starkey¹ ¹*Auburn University Department of Poultry Science*, ²*Auburn University Department of Animal Science*, ³*Balchem Animal Nutrition and Health, Balchem Corp.*

4:00-6:00 PM

Poster Reception

Pathology

Moderator: Dr. Valerie Marcano, Elanco

Room Number: B312

Monday, January 24, 2022

8:00 AM M31

Pathogenesis of *Histomonas meleagridis* in broilers

Vijay Durairaj*¹, Ryan Vander Veeb¹, Mary Drozd² ¹*Huvepharma, Inc*, ²*University of Nebraska-Lincoln*

8:15 AM M32

Understanding the transmission of *Histomonas meleagridis* in turkeys

Catherine Fudge*^{GS}, Olivia Wedegaertner, Katherine Cupo, Christina Sigmon, Frank Edens, Robert Beckstead, Chongxiao Chen *North Carolina State University*

8:30 AM M33

A research model to investigate the role of stressors on *Cochlosoma anatis* infections in turkeys

Christina Sigmon*, Robert Beckstead, Chongxiao Chen *NC State University*

8:45 AM M34

Effects of *E. tenella* infection on growth performance, gut health, and volatile fatty acid production in broiler chickens

Janghan Choi*^{1GS}, Hanseo Ko¹, Yuguo Thompkins¹, Po-yun Teng¹, Jeferson Lourenco², Todd Callaway², Wookyun Kim¹ ¹*Department of Poultry Science, University of Georgia*, ²*Department of Animal and Dairy Science*

9:00 AM M35

Visualizing *Eimeria acervulina* infection in duodenal tissue using in situ hybridization

Sara Cloft*^{1GS}, Kate Miska², Eric Wong¹ ¹*Department of Animal and Poultry Sciences Virginia Tech*, ²*Animal Biosciences and Biotechnology Laboratory, Henry A. Wallace Beltsville Agricultural Research Center*

9:15 AM M36

Saponin-based solution (Norponin XO) as efficient as coccidiostats to maintain broilers' zootechnical performances under coccidiosis challenge.

Mohammed El Amine BENARBIA*^{1,2}, Pierre CHICOTEAU^{1,2} ¹*NOR FEED*, ²*LABCOM FEED IN TECH: Université d'Angers*

9:30 AM M37

Two blends of botanical extracts optimize coccidiosis-preventive strategies and maintain growth performance in *Eimeria*-challenged broilers.

Jonathan Pierron^{1,2}, Bertrand Medina³, Ivan Girard³, Carl Julien*^{1,2} ¹*Université Laval*, ²*Centre de recherche en sciences animales de Deschambault (CRSAD)*, ³*Probiotech International Inc.*

9:45 AM M38

Comparison of two *Clostridium perfringens* strains for inducing subclinical necrotic enteritis in broiler chickens

Nima Emami*, Rami Dalloul *Department of Poultry Science, University of Georgia*

Room Number: B313 Foyer

Monday, January 24, 2022

10:00 AM Break

Pathology

Moderator: Dr. Kaytee McCullough, UGA

Room Number: B312

Monday, January 24, 2022

10:15 AM M39

Essential oil and yeast cell wall efficacy in a necrotic enteritis challenge study

Charles Hofacre*¹, Liliana Borges², Melina Bonato², Ricardo Barbalho² ¹*Southern Poultry Research Group, Inc.*, ²*ICC Industrial Comércio Exportação e Importação SA*

10:30 AM M40

Effects of Quillaja saponaria extract on mRNA abundance of tight junction proteins and cellular metabolism genes during a necrotic enteritis challenge in broilers

Candice Blue*^{1,6S}, Nima Emami¹, Mallory White², Omar Gutierrez³, Staci Cantley³, Rami Dalloul¹ ¹*University of Georgia*, ²*Virginia Western Community College*, ³*Huvepharma Inc.*

10:45 AM M41

Local and Systemic Cyto(Chemo)kine and FGF expression Profile in Bacterial Chondronecrosis with Osteomyelitis (BCO)-affected Broilers

Alison Ramser*^{1,26S}, Elizabeth Greene¹, Robert Wideman¹, Sami Dridi^{1,2} ¹*University of Arkansas, Center of Excellence for Poultry Science*, ²*University of Arkansas, Cell and Molecular Biology*

11:00 AM M42

Causes of morbidity and mortality in Alabama commercial broiler chickens

Hailey Quercia*^{1,6S}, Carey Laster², Erfan Chowdhury² ¹*Auburn University College of Veterinary Medicine, Department of Pathobiology*, ²*Alabama Department of Agriculture and Industries, Veterinary Diagnostic Laboratory system*

11:15 AM M43

Survey of feed mills around United States for select bacterial pathogens

Cesar Escobar Lobo*^{6S}, Ken Macklin, Wilmer Pacheco, Rudiger Hauck *Auburn University*

11:30 AM M44

Size and morphological variation among plasmacytes found during reactive plasmacytosis in lame ducklings

Paul Cotter*¹, Ben Fetrow² ¹*Cotter Laboratory*, ²*Maple Leaf Farms*

11:45 AM M45

Evaluation of therapeutic efficacy of a phytogetic formulation in experimentally-induced chronic respiratory disease of commercial broiler chicken

Nasreen Ahmed¹, Ch. Srilatha¹, R. Ramanamurthy¹, David Thakur², Bhaskar Ganguly*²

¹*Department of Veterinary Pathology, College of Veterinary Science, Sri Venkateswara Veterinary University*, ²*Department of Clinical Research, Research & Development Division, Ayurvet Limited*

SCAD

Moderator: Dr. Christine Vuong, UARK

Room Number: B312

Monday, January 24, 2022

1:00 PM M46

Evaluation of an in-vitro inhibitory methodology utilizing field strains of *E. coli* and *Salmonella* spp. as assessment of probiotic effectiveness in poultry

John Schleifer^{*1}, Dorthe Sandvang¹, Virginia Baxter², Charles Hofacre², Jean-Christophe Bodin¹, Stephanie Frankenbach¹, Christophe Bostvironnois¹ ¹*Chr. Hansen A/S*, ²*Southern Poultry Research Group*

1:15 PM M47

Novel genes involved in the biofilm formation of Avian Pathogenic *Escherichia coli*

Meaghan Young^{*GS}, Aline de Oliveira, Lisa Nolan, Catherine Logue, Nicolle Barbieri *University of Georgia*

1:30 PM M48

Protective Efficacy of Diamond V XPC Diet against APEC Challenge in Poultry.

Catherine Logue^{*1}, Anne Devorak¹, Breck Peterson¹, Yu-Yang Tsai¹, Meaghan Young¹, Hiliary Hsieh¹, Charlyze Nakatsu¹, Nicolle Barbieri¹, Timothy Johnson² ¹*University of Georgia*, ²*Diamond V Mills*

1:45 PM M49

Antimicrobial resistance and characterization of *Escherichia coli* isolated from poultry litter.

Maryann Khong^{*1UG}, Shawna Weimer¹, Ashlyn Snyder¹, Anna Magnaterra¹, Nicolle Barbieri², Meaghan Young² ¹*University of Maryland*, ²*College of Veterinary Medicine University of Georgia*

2:00 PM M50

Proventriculitis in a broiler company in Mississippi: a field investigation

Gunnar Dunnam^{*GS}, Alejandro Banda *Mississippi State University Poultry Research and Diagnostic Lab*

2:15 PM M51

Focal Duodenal Necrosis: identification of the potential role of Gram-negative bacteria in intestinal lesions

Yu-Yang Tsai^{*1GS}, Catherine Logue¹, Nicolle Barbieri¹, Alvin Camus² ¹*Poultry Diagnostic and Research Center, Department of Population Health, The University of Georgia*, ²*Department of Pathology, The University of Georgia*

2:30 PM M52

Retrospective analysis of an emerging *Enterococcus cecorum* outbreak in a Southern US broiler integration

Gunnar Dunnam, Jay Thornton, Martha Pulido-Landinez^{*} *Mississippi State University, Poultry Research and Diagnostic Laboratory*

2:45 PM M53

Performance data in broilers challenged with *Eimeria* species after coccidial vaccination.

Taylor Boyett^{*1GS}, Rocio Crespo¹, Daniel Adams^{1,2}, Kimberly Livingston¹ ¹*North Carolina State University*, ²*University of Georgia*

3:00 PM M54

A meta-analysis: microbiome of chickens infected with coccidia

Andrea Pietruska^{*1GS}, Rüdiger Hauck^{1,2} ¹*Department of Pathobiology, Auburn University*, ²*Department of Poultry Science, Auburn University*

3:15 PM M55

Could anticoccidial sensitive *Eimeria* spp. recovered from wild turkey feces be a potential solution to control coccidiosis in commercial turkey operations?

Carolina Trujillo Peralta^{*1GS}, Danielle Graham¹, Roberto Senas Cuesta¹, Callie Selby¹, Makenly Coles¹, Aaron Forga¹, Marcela Cardona¹, Lauren Laverty¹, Lucas Graham¹, Juan Latorre¹, Lisa Bielke², Guillermo Tellez-Isaias¹, John Barta³, Billy Hargis¹ ¹*Department of Poultry Science, University of Arkansas*, ²*Department of Animal Sciences, The Ohio State University*, ³*Department of Veterinary Pathobiology, Ontario Veterinary College, University of Guelph*

3:30 PM M56

A microbial physiology approach to the detection and enumeration of *Clostridium perfringens* in the poultry house environment

Sydney Kinstler*^{1GS}, Margie Lee², John Maurer¹ ¹*Virginia Tech, Department of Animal and Poultry Sciences*, ²*Virginia Tech, Biomedical Science and Pathobiology*

3:45 PM M57

A flavonoid-rich corn cultivar decreases the incidence of necrotic enteritis in broilers

Vinicius Buiatte*^{1GS}, Dorian Dominguez¹, Tyler Lesko¹, Mark Jenkins², Surinder Chopra¹, Alberto Gino Lorenzoni¹ ¹*The Pennsylvania State University*, ²*United States Department of Agriculture*

4:00-6:00 PM**Poster Reception**

Metabolism and Nutrition: General Nutrition

Moderator: Dr. Wilmer Pacheco, Auburn

Room Number: B313

Monday, January 24, 2022

7:30 AM M58

Effects of Syngenta Enogen® corn on egg yolk color

Hanna Alcocer*^{1GS}, Morgan Gravely¹, Dima White², Xiaoxing Xu¹, Daniela Alambarrio¹, Woo Kim², John Gonzalez¹ ¹*Department of Animal and Dairy Science, University of Georgia*, ²*Department of Poultry Science, University of Georgia*

7:45 AM M59

The Effect of Feeding Sweet Potato and/or Peanuts on Layer Performance and Egg Quality

Kari Harding*^{1GS}, Thein Vu², Rebecca Wysocky¹, Ramon Malheiros¹, Kenneth Anderson¹, Ondulla Toomer² ¹*Prestage Department of Poultry Science, North Carolina State University*, ²*Food Science & Market Quality and Handling Research Unit, ARS, USDA*

8:00 AM M60

Effects of soybean meal processing conditions on growth performance and intestinal integrity in coccidia vaccinated broiler chickens

Ana Villegas*^{1GS}, Anita Menconi², Nadia Yacoubi², Brian Jordan¹, Todd Applegate¹ ¹*Department of Poultry Science, University of Georgia*, ²*Evonik Operations GmbH, Nutrition & Care*

8:15 AM M61

Impact of complete replacement of soybean meal with black soldier larvae meal on plasma amino acid concentrations, enzymes, and other biochemical constituents in broiler chickens

Hannah Facey*^{GS}, Munene Kithama, Mohsen Mohammadigheisar, Lee-Anne Huber, Anna K. Shoveller, Elijah Kiarie *University of Guelph*

8:30 AM M62

Energy values of faba beans and field peas for broiler chickens using a regression method

Abidemi Adekoya*^{GS}, Olayiwola Adeola *Purdue University*

8:45 AM M63

Energy utilization of hydrolyzed feather meal and flash-dried poultry protein for broiler chickens

Opeadura Osunbami*^{GS}, Olayiwola Adeola *Purdue University*

9:00 AM M64

Estimation of individual feed intake of broiler chickens in group-housing systems

Jung Yeol Sung*^{GS}, Olayiwola Adeola *Purdue University*

9:15 AM M65

New methodology to measure internal particle size in pellets and to quantify the degree of grinding during pelleting

Susan Bonilla*^{GS}, Joseph Gulizia, Santiago Sasía, Martha Rueda, Wilmer Pacheco *Department of Poultry Science, Auburn University*

9:30 AM M66

Effect of corn samples from different origins on broiler performance, processing yield and nutrient digestibility from 1 to 35 days of age.

Jose Vargas Patino*^{GS}, Joseph Gulizia, Susan Bonilla, Santiago Sasía, Wilmer Pacheco *Auburn University*

9:45 AM M67

Effects of breeder flock age (pullet or late) and feeding strategy (choice or no choice) as it influences 0-14 d bird beak capacity, feed particle selection, and 0-14 d performance

Maria Alvarenga*^{1GS}, Pratima Adhikari¹, Joseph Moritz², Kelley Wamsley¹ ¹*Mississippi State University*, ²*West Virginia University*

10:00 AM Break

Metabolism and Nutrition: General Nutrition

Moderator: Dr. Tayo Adedokun, U. of Kentucky

Room Number: B313

Monday, January 24, 2022

10:15 AM M68

Histological and gene expression analyses of broiler jejunal and liver tissues from commercial farms in relation to flock performance. 1. Histological findings

Davis Fenster*^{1GS}, Candice Blue¹, Don Ritter², Luis Romero³, Rami Dalloul¹ ¹*University of Georgia*, ²*Poultry Business Solutions LLC*, ³*anh-innovation Lda*.

10:30 AM M69

Effect of starter diet nutrient restriction and feed form on broiler chickens until 19 days of age
Joshua Flees*^{GS}, Caroline Gregg, Brittany Wall, Gerardo Abascal-Ponciano, Charles Starkey, Jessica Starkey *Auburn University Department of Poultry Science*

10:45 AM M70

The effect of oil type and oil quality on the fatty acid profile of the liver and adipose tissues in 20-day-old broiler chickens

Richard Adefioye*^{1GS}, Merlin Lindemann¹, Anthony Pescatore¹, Michael Azain², Michael Ford¹, Sunday Adedokun¹ ¹*University of Kentucky*, ²*University of Georgia*

11:00 AM M71

Validation of a previously determined nitrogen-corrected metabolizable energy value for distillers dried grains with solubles on more recently collected samples from 4 different biorefineries

Benjamin Parsons*^{1GS}, Kyle Teague¹, Kenia Mitre¹, Kevin Herrick², Melissa Jolly-Breithaupt², Samuel Rochell¹ ¹*Center of Excellence for Poultry Science, University of Arkansas System Division of Agriculture*, ²*POET Bioproducts*

11:15 AM M72

Comparison of the Ark NE and AMEn values of soybean meal and corn for fast-growing male broilers from d0 to d56

Nawin Suesuttajit*^{GS}, Jordan Weil, Cole Umberson, Pramir Maharjan, Diego Martinez, Craig Coon *University of Arkansas, Center of Excellence for Poultry Science*

11:30 AM M73

Comparison between an in-line implementation of a temperature profile probe-based tool vs. three non-contact methodologies to monitor hot pellet temperature in broiler diets

Andrea Rubio*^{GS}, Sharon Chuah, Corey Wishon, Rachael Wood, Adam Fahrenholz *North Carolina State University*

11:45 AM M74

Assessment of the quality of extruded full fat soybean meal subjected to different processing temperatures

Danny Patino*^{GS}, Michael Joseph *North Carolina State University*

12:00 PM Lunch

Metabolism and Nutrition: General Nutrition

Moderator: Dr. Samuel Rochell, UARK

Room Number: B313

Monday, January 24, 2022

1:00 PM M75

Understanding variability of soybean sucrose, oligosaccharide, and NSP content

Muhammad Ali^{*1GS}, Maria Alfaro-Wisaquillo¹, Gustavo Quintana-Ospina¹, Klaus Englyst², Gilson Gomes³, Edgar Oviedo-Rondón¹ ¹*Prestage Department of Poultry Science, North Carolina State University*, ²*Englyst Carbohydrates Ltd*, ³*AB Vista Inc*

1:15 PM M76

Effects of corn kernel hardness and drying temperature on nutrient composition, quality parameters, and early broiler performance.

Joaquin Cabanas-Ojeda^{*1GS}, Nicolas Mejia-Abaunza², Paula Lozano-Cruz², Valmiro Lima Aragão Neto¹, Muhammad Ali¹, Maria Camila Alfaro-Wisaquillo¹, Gustavo Quintana-Ospina¹, Lina Penuela-Sierra², Gilson Gomez³, Edgar Oviedo-Rondon¹ ¹*North Carolina State University*, ²*Facultad de Medicina Veterinaria y Zootecnia, Universidad del Tolima*, ³*AB Vista*

1:30 PM M77

Effects of corn kernel hardness and drying temperature on corn mean particle size and distribution post-grinding in a hammer mill

Valmiro Lima Aragao Neto^{*1UG}, Paula Lozano-Cruz¹, Nicolas Mejia-Abaunza¹, Joaquin Cabanas¹, Muhammad Ali¹, Maria Camila Alfaro-Wisaquillo¹, Gustavo A. Quintana-Ospina¹, Lina Maria Penuela-Sierra¹, Virginie Rivieira², Edgar Oviedo-Rondon¹ ¹*Prestage Department of Poultry Science, North Carolina State University*, ²*AB Vista*

1:45 PM M78

Nutrient composition differences between whole corn kernels, broken kernels, and corn residues.

Nicolas Mejia-Abaunza^{*1UG}, Joaquin A. Cabanas-Ojeda¹, Paula Lozano-Cruz¹, Valmiro Lima Aragao Neto¹, Muhammad Ali¹, Maria Alfaro-Wisaquillo¹, Gustavo A. Quintana-Ospina¹, Lina M. Penuela-Sierra¹, Virginie Rivera², Edgar O. Oviedo-Rondon¹ ¹*Prestage Department of Poultry Science, North Carolina State University*, ²*AB Vista*

2:00 PM M79

Nutrient composition of corn particle fractions generated during hammer milling

Paula Lozano-Cruz^{*1UG}, Nicolas Mejia-Abaunza¹, Valmiro Lima Aragão Neto¹, Joaquin A. Cabanas-Ojeda¹, Gilson A. Gomes², Virginie Rivera², Edgar O. Oviedo-Rondon¹ ¹*Prestage Department of Poultry Science, North Carolina State University*, ²*AB Vista*

Metabolism and Nutrition: Vitamins and Minerals

Moderator: Dr. Kelley Wamsley, MSSTATE

Room Number: B313

Monday, January 24, 2022

2:15 PM M80

Copper requirements of broilers fed phytase

Patricia de Carvalho^{*1GS}, Sergio Luiz Vieira¹, Julmar Feijo¹, Heitor Rios¹, Walter Altevogt¹, Bernnardo Barros e Xavier¹, Carolina Nunes¹, Pablo Ibarro¹, Douglas Drebes¹, Raquel Horn¹, Catarina Stefanello², Liris Kindlein¹ ¹*Federal University of Rio Grande do Sul*, ²*Federal University of Santa Maria*

2:30 PM M81

Effect of partial replacement of inorganic zinc with zinc methionine and partial replacement of inorganic zinc/manganese methionine on live performance and processing yield

Caleb Marshall^{*1GS}, Timothy Biggs², Donald McIntyre², Kelley Wamsley¹ ¹*Department of Poultry Science, Mississippi State University*, ²*Global Animal Products, Inc.*

2:45 PM M82

Effect of different dietary vitamin D3 levels on performance and bone quality in broilers

Tainá Lopes^{*GS}, Mariana Vasconcelos, Isadora Araújo, Lorena Sousa, Bruno Costa, Leonardo Lara, Itallo Araújo *Universidade Federal de Minas Gerais*

3:00 PM M83

Evaluation of increasing additions of choline chloride on modern broiler chicken growth performance and carcass characteristics

Caroline Gregg^{*1GS}, Zack Lowman², Kari Estes², Charles Starkey¹, Jessica Starkey¹ ¹*Auburn University Department of Poultry Science*, ²*Balchem Corporation*

3:15 PM M84

Commercial dietary chelated organic trace mineral inclusion strategies on broiler breeder hen reproductive performance, egg quality and broiler offspring characteristics

Luis Avila^{*1GS}, Kelly Sweeney¹, Melanie Roux², Bob Buresh², Dima White¹, Woo Kim¹, Jeanna Wilson¹ ¹*University of Georgia Department of Poultry Science*, ²*Novus International*

Metabolism and Nutrition: Vitamins and Minerals

Moderator: Dr. Kelley Wamsley, MSSTATE

Room Number: B313

Monday, January 24, 2022

3:30 PM M85

Corn fermented protein a sustainable, alternative, functional protein for poultry from bioethanol biorefineries

Peter Williams* *Fuid Quip Technologies*

4:00-6:00 PM

Poster Reception

Metabolism and Nutrition: Enzymes, Feed Additives

Moderator: Dr. Woo Kyun Kim, UGA

Room Number: B314

Monday, January 24, 2022

7:30 AM M86

Examining the effects of dietary calcium level and a multi-carbohydrase on the performance of male broilers

Reed Dillard^{*1GS}, Adam Davis¹, Elizabeth Freeman¹, Ariel Bergeron², Robert Shirley² ¹*University of Georgia, Poultry Science Department*, ²*Adisseo USA, Inc.*

7:45 AM M87

Phytase and multicarbohydrase interactions on broiler performance, processing yield, and nutrient digestibility from 1 to 42 days of age

Joseph P. Gulizia^{*1GS}, Jose I. Vargas¹, Susan M. Bonilla¹, Santiago J. Sasia¹, Sara Llamas-Moya², Tri Duong², Wilmer J. Pacheco¹ ¹*Department of Poultry Science, Auburn University*, ²*Kerry Inc.*

8:00 AM M88

Effects of phytase in a calcium and phosphorous-reduced diet on growth performance and bone mineralization of broilers challenged with *E. Maxima* and *E. Acevulina*

Hanyi Shi^{*GS}, Taina Lopes, Yuguo Tompkins, Jinquan Wang, Janghan Choi *University of Georgia*

8:15 AM M89

Effects of a novel consensus bacterial 6-phytase variant on growth performance of broilers fed corn-soybean meal based diets with meat and bone meal and deficient in nutrients and energy

Eric Sobotik^{*1GS}, Gabrielle House¹, Alfred Dimas¹, Abiodun Bello², Katie Hilton³, Franco Mussini³, Janet Remus³, Gregory Archer¹ ¹*Department of Poultry Science, Texas A&M University*, ²*Danisco Animal Nutrition, IFF*, ³*Danisco Animal Nutrition IFF*

8:30 AM M90

Effects of a corn-expressed glucanase and high specific activity corn-expressed phytase at different inclusion rates on growth performance of broilers fed corn-soybean meal based diets with reduced available phosphorus, calcium, and metabolizable energy

Alfred Dimas^{*1GS}, Eric Sobotik¹, Gabrielle House¹, Austin Stiewert¹, Phillip Lessard², Gregory Archer¹ ¹*Department of Poultry Science, Texas A&M University*, ²*Agrivida, Inc.*

8:45 AM M91

Nutrient utilization, oocyst shedding and intestinal lesion in *Eimeria*-challenged broiler chickens fed diets with different levels of xylo-oligosaccharides

Yang Lin^{*GS}, Oluyinka Olukosi *University of Georgia*

9:00 AM M92

Growth performance and organ weights of broilers given an *Eimeria* challenge with or without a novel *Bacillus subtilis* probiotic treatment

Alison Gelinas^{*GS}, Sudhanshu Shu, Julang Li, Elijah Kiarie *University of Guelph*

9:15 AM M93

Longitudinal characterization of the effect of probiotic, phytotherapeutic, and antimicrobial feeding strategies on poultry performance

Ana Fonseca^{*GS}, Stephanie Clouser, John Boney, Erika Ganda *The Pennsylvania State University*

9:30 AM M94

Efficacy of multienzyme supplementation on growth performance, nutrients digestibility, gut health and microbiome of broiler chickens infected with *Eimeria* species.

Jing Yuan^{*GS}, Timothy Johnson, Kolapo Ajuwon, Olayiwola Adeola *Department of Animal Sciences, Purdue University*

9:45 AM Break

Metabolism and Nutrition: Enzymes, Feed Additives

Moderator: Dr. John Boney, Penn State

Room Number: B314

Monday, January 24, 2022

10:00 AM M95

Effects of non-starch polysaccharide degrading enzyme inclusion to corn and soybean-meal based diets containing wheat on broiler performance and ileal energy digestibility

Courtney Poholsky^{*1GS}, Alyssa Lyons¹, Staci Cantley², John Boney¹ ¹*Pennsylvania State University*, ²*Huvepharma Inc.*

10:15 AM M96

The effect of cellulose fiber, wheat bran, and cotton carpal fiber at different grind sizes on the cecal microbiome of both uninfected turkey poults and turkey poults challenged with *Clostridium perfringens*

Olivia Wedegaertner^{*GS}, Aaron Kiess, Robert Beckstead, Chongxiao Chen *North Carolina State University*

10:30 AM M97

Plant extracts and tributyrin response on young laying hen performance

Jordyn Samper^{*1GS}, Brian Glover², Michael Persia¹, Jose Charal², Milan Hruby² ¹*Virginia Tech*, ²*Archer Daniels Midland Company*

10:45 AM M98

Impact of feeding omega-3 fatty acids and yeast autolysate supplement on growth and development of egg-type Lohmann LSL-Lite pullets from hatch through to 16 weeks of age

Junhyung Lee^{*GS}, Veronica Cheng, Elijah Kiarie *University of Guelph*

Metabolism and Nutrition: Amino Acids

Moderator: Dr. John Boney, Penn State

Room Number: B314

Monday, January 24, 2022

11:00 AM M99

Evaluating the impact of varying digestible lysine and AME levels fed during the finisher phase (28-41 d) on male Cobb MV × Cobb 500 FF broiler chickens growth performance and processing yield

Dalton Dennehy^{*1GS}, Andrew Brown¹, Cesar Coto², Leonel Mejia², Kelley Wamsley¹ ¹*Department of Poultry Science, Mississippi State University, ²Cobb-Vantress*

11:15 AM M100

Can soybean meal be replaced with canola meal and corn DDGS in low crude protein diets supplemented with crystalline amino acid?

Adeleye Ajao^{*GS}, Dima White, Woo Kim, Oluyinka Olukosi *University of Georgia*

11:30 AM M101

Reducing dietary crude protein through inclusion of valine, arginine, and isoleucine maintains broiler performance, yield and reduces nitrogen excretion

Mitchell Davis^{*1GS}, Roshan Adhikari², Jason Lee², Adam Davis¹ ¹*The University of Georgia, ²CJ America Inc.*

11:45 AM M102

Responses of broilers to increasing dietary glycine when fed reduced or low crude protein diets from 0 to 48 days

Trevor Lee^{*1GS}, Jason Lee², Chuanmin Ruan¹, Samuel Rochell¹ ¹*Center of Excellence for Poultry Science, University of Arkansas System Division of Agriculture, ²CJ America, INC*

12:00 PM Lunch

Metabolism and Nutrition: Amino Acids

Moderator: Dr. Roshan Adhikari, CJ America

Room Number: B314

Monday, January 24, 2022

1:00 PM M103

Reduced crude protein diets maintains growth and yield parameters of mixed-sex broilers while reducing nitrogen excretion, litter moisture, and ecological footprint

Oscar Machado¹, Leonel Mejia², Victor Naranjo^{*3}, Wilmer Pacheco⁴, Yordan Martinez¹

¹Zamorano University, ²Cobb-Vantress, ³Evonik Guatemala S.A., ⁴Auburn University

1:15 PM M104

Interactive effects of dietary isoleucine and valine ratios to lysine in response to varying leucine to lysine ratios in broilers

Ruben Kriseldi^{*1}, Alejandro Corzo¹, Marcelo Silva¹, Jason Lee², Roshan Adhikari², Chance

Williams³ ¹Aviagen, ²CJ. Bio America, ³Wayne Farms

1:30 PM M105

Standardization of the KOH protein solubility test for soybean meal in a single commercial laboratory and correlation to in vivo poultry amino acid digestibility

Nelson Ruiz^{*1}, Carl Parsons², Brian Steinlicht³, Dave Taysom³, Xin Wu⁴, Fiona Liu⁴ ¹Nelson Ruiz

Nutrition, LLC, ²Department of Animal Sciences, University of Illinois, ³Dairyland Laboratories,

Inc., ⁴American Oil Chemists' Society

1:45 PM M106

Precise nutrition: Regression equations using KOH protein solubility to estimate digestible lysine and digestible arginine in commercial lots of soybean meal that have undergone the Maillard reaction

Nelson Ruiz^{*1}, Carl Parsons², Benjamin Parsons² ¹Nelson Ruiz Nutrition, LLC, ²Department of

Animal Sciences, University of Illinois

2:00 PM M107

Interaction effects of amino acids relative to ideal lysine ratio and exogenous protease supplemented to low CP diet on performance of broiler chicken

Muhammad Adeel Maqsood^{*1}, Ehsaan Ullah Khan¹, Sohail Ahmad² ¹Department of Animal

Nutrition, University of Veterinary and Animal Sciences, ²Department of Poultry Production,

University of Veterinary and Animal Sciences

2:15 PM M108

Reviewing nutritional standards for the modern male turkey: optimum digestible arginine to lysine ratio

Roshan Adhikari^{*1}, Jason Lee¹, Curtis Novak², Reza Poureslami², Jeff Firman³ ¹CJ Bio America,

²Purina Animal Nutrition, ³Missouri Contract Poultry Research

Metabolism and Nutrition: General Nutrition

Moderator: Dr. Katie Hilton, Danisco Animal Nutrition (IFF)

Room Number: B314

Monday, January 24, 2022

2:30 PM M109

Survey of US soybean meal - does region influence quality and antinutritional factors?

Katie Hilton*, Elizabeth Kim, Janet Remus, Franco Mussini *Danisco Animal Nutrition (IFF)*

2:45 PM M110

Determination of the standardized ileal digestible calcium requirement of fast-growing broilers from 25 to 42 days post-hatch

Carrie Walk*¹, Zhenzhen Wang², Shikui Wang², Jose-Otávio Sorbara¹, Jingcheng Zhang^{2,1} *DSM Nutritional Products, ²DSM Nutritional Products, Animal Nutrition Research Center*

3:00 PM M111

Feasibility in the use of purified sources of dietary fiber in the evaluation of intestinal viscosity, organ growth, intestinal morphology, and nutrient digestibility

Oscar Tejeda*¹, Woo Kim^{2,1} *Southern Arkansas University, Department of Agriculture, ²The University of Georgia, Department of Poultry Science*

3:15 PM M112

Enzymatically treated yeast to affect gut integrity and growth performances of Eimeria challenged broiler.

Hagen Schulze*¹, Douglas Haese^{2,1} *Livalta / AB Agri, ²Centro de Tecnologia Animal*

3:30 PM M113

Histological and gene expression analyses of broiler jejunal and liver tissues from commercial farms in relation to flock performance. 2. Gene expression

Luis Romero*¹, Davis Fenster², Candice Blue², Mislav Acman¹, Don Ritter³, Rami Dallou^{2,1} *anh-innovation Lda., ²University of Georgia, ³Poultry Business Solutions LLC*

3:45 PM M114

Effect of feeding mango seed kernel on performance and carcass characteristics of broilers

Tuba Riaz¹, Zafar Hayat*^{1,2}, Abdur Rahman¹, Mazhar Abbas^{1,1} *CVAS-Jhang Campus, University of Veterinary and Animal Sciences, ²Department of Animal Sciences, College of Agriculture, University of Sargodha*

4:00-6:00 PM

Poster Reception

Environment, Management and Animal Well-Being: Environmental Impacts

Moderator: Dr. Lilong Chai, UGA

Room Number: B315

Monday, January 24, 2022

7:30 AM M115

Optimization of a loop-mediated isothermal amplification (LAMP) assay for the detection of *Clostridium perfringens*

Deepa Chaudhary*^{1GS}, Linan Jia¹, Anuraj Sukumaran¹, Wen-Hsing Cheng², Aaron Kiess³, Li Zhang¹ ¹*Department of Poultry Science, Mississippi State University*, ²*Department of Food Science, Nutrition and Health Promotion, Mississippi State University*, ³*Prestage Department of Poultry Science, Carolina State University*

7:45 AM M116

Genotypic-phenotypic discrepancies between antimicrobial resistance characteristics of *Escherichia coli* isolated from asymptomatic and diseased broilers

Priyanka Devkota*^{1GS}, Sabin Poudel¹, Xue Zhang², Anuraj Sukumaran¹, Pratima Adhikari¹, Reshma Ramachandran¹, Aaron Kiess³, Li Zhang¹ ¹*Department of Poultry Science, Mississippi State University*, ²*Department of Food Science, Nutrition and Health Promotion, Mississippi State University*, ³*Prestage Department of Poultry Science, North Carolina State University*

8:00 AM M117

Characterization of virulence-associated genes and phylogenetic groups of Avian pathogenic *Escherichia coli* isolated from broiler breeders with colibacillosis from Mississippi

Madalyn Jennings*^{UG}, Li Zhang, Pratima Adhikari, Reshma Ramachandran *Mississippi State University*

8:15 AM M118

Effects of pullets age and activities on air quality in the cage-free house

Ramesh Bist*^{1GS}, Xiao Yang¹, Sachin Subedi¹, Yangyang Guo¹, Milan Sharma¹, Amit Singh¹, Woo Kim¹, Casey Ritz¹, Deana Jones², Prafulla Regmi¹, Lilong Chai¹ ¹*Department of Poultry Science, University of Georgia*, ²*US National Poultry Research Center, USDA ARS*

8:30 AM M119

Campylobacter prevalence differs across and within broiler houses with re-used poultry litter
Reed Woyda*^{1GS}, Adelumola Oladeinde², Dinku Endale³, Timothy Strickland³, Babafela Awosile⁴, Zaid Abdo¹ ¹*Colorado State University, Program in Cell and Molecular Biology*, ²*Egg safety and Quality Research Unit, US National Poultry Research Center, USDA*, ³*Southeast Watershed Research, USDA*, ⁴*School of Veterinary Medicine, Texas Tech University*

8:45 AM M120

Evaluation of broiler performance fed nicarbazin: RH Effect

Kristin Miles*^{GS}, Michael Czarick, Garret Ashabranner, Brian Fairchild *University of Georgia*

9:00 AM M121

Evaluating the effect of day length (24 vs 20 hours) during brooding on broiler performance

Garret Ashabranner*^{GS}, Michael Czarick, Kristin Miles, Brian Fairchild *University of Georgia*

9:15 AM M122

Assessment of early-stage thermal variation on broiler chicken embryonic mortality and hatchability

Brittany Wall*^{1GS}, Martha Rueda², Jeremiah Davis², Joseph Purswell³, Charles Starkey¹, Jessica Starkey¹ ¹*Auburn University Poultry Science Department*, ²*Auburn University National Poultry Technology Center*, ³*USDA ARS Poultry Research Unit, Mississippi State*

9:30 AM M123

Effect of temperature, relative humidity, and thermal humidity index on live performance parameters of broilers raised under commercial tropical conditions

Gustavo Quintana-Ospina*^{1GS}, Maria Alfaro-Wisaquillo¹, Luis Bernal-Arango², Juan Ruiz-Ramirez², Gustavo Martinez-Bernal², Edgar Oviedo-Rondón¹ ¹*North Carolina State University*, ²*Grupo BIOS Inc.*

9:45 AM Break

Environment, Management and Animal Well-Being: Stress Responses, Behavior

Moderator: Dr. Zachary Williams, Michigan State

Room Number: B315

Monday, January 24, 2022

10:00 AM M124

Evaluating growth performance, intestinal barrier integrity, and meat quality of random bred broiler populations and a common ancestor under heat stress conditions.

Travis Tabler^{*GS}, Elizabeth Greene, Nicholas Anthony, Sami Dridi, Sara Orłowski *University of Arkansas*

10:15 AM M125

Evaluation of head removal following cervical dislocation for broiler euthanasia

Alexandra Jackson^{*UG}, Andrea Urrutia, Leticia Orellana Galindo, Marco Reina, Montana Riggs, Dianna Bourassa, Bethany Baker-Cook *Auburn University*

10:30 AM M126

Effect of silvopasture versus open pasture systems on fearfulness and leg health in fast-growing broiler chickens

Bidur Paneru^{*GS}, Shawna Nastasi, Gabriel Pent, Adam Downing, John Munsell, John Fike, Leonie Jacobs *Virginia Polytechnic Institute and State University*

10:45 AM M127

The effect of environmental complexity and stocking density on broiler chicken behavior

Lauren Evans^{*UG}, Mallory Anderson, Andrew Campbell, Lacey Daulton, Kristin Omans, Alexandra Ulans, Leonie Jacobs *Virginia Polytechnic Institute and State University*

11:00 AM M128

Comparison of the Effect of Enrichments on Behaviors of Broilers in Commercial and Experimental Housing Environments

Heidi Rinehart^{*UG}, Shawna Weimer, Anna Magnaterra, Zoie McMillian *University of Maryland*

11:15 AM M129

Effects of dietary mannan oligosaccharide supplementation on *Campylobacter jejuni* inoculated broilers

Luis Munoz^{*GS}, Matthew Bailey, James Krehling, Aidan Talorico, Kaicie Chasteen, Cesar Escobar, Sam Talorico, Maria Elliot, Kenneth Macklin *Auburn University*

11:30 AM M130

The effects of ultraviolet light and darkness on laying hen movement in an aviary housing system

Andrea Mendoza^{*1GS}, Shawna Weimer², Zachary Williams¹ *1Michigan State University, 2University of Maryland*

11:45 AM M131

Comparison of a standard male diet to an organic selenium supplemented male diet on rooster semen quality and reproductive performance

Kelly Sweeney^{*GS}, Luis Avila, Jeanna Wilson *University of Georgia*

12:00 PM Lunch

Environment, Management and Animal Well-Being: Stress Responses, Behavior

Moderators: Dr. Chongxiao (Sean) Chen, NCSU and Dr. Ahmed Ali, Clemson

Room Number: B315

Monday, January 24, 2022

1:00 PM M132

The role of pullet rearing and hen age on the distribution of layers in multi-tiered aviaries

Allison Pullin^{*1GS}, Christina Rufener², Suzanne Millman³, John Tarlton⁴, Michael Toscano⁵, Richard Blatchford¹, Maja Makagon¹ ¹*University of California, Davis*, ²*Center for Proper Housing of Ruminants and Pigs, Federal Food Safety and Veterinary Office FSVO*, ³*Iowa State University*, ⁴*University of Bristol*, ⁵*University of Bern*

1:15 PM M133

The effect of stocking density stress on commercial white egg layer production parameters

Benjamin Alig^{*GS}, Ramon Malheiros, Kenneth Anderson *North Carolina State University*

1:30 PM M134

An assessment of *Heterakis gallinarum* transmission between poultry farms

Justin Lowery^{*1GS}, Catherine Fudge¹, Brian Wooming², Katherine Cupo¹, Olivia Wedegaertner¹, Lin Walker¹, Chongxiao (Sean) Chen¹ ¹*North Carolina State University, Prestage Department of Poultry Science*, ²*Cargill, Inc.*

1:45 PM M135

Continuous environmental noise pollution and gizzard koilin layer erosion in young turkey poult

Chloe O'Brien^{*UG}, Olivia Wedegaertner, Catherine Fudge, Katherine Cupo, Frank Edens, Chongxiao (Sean) Chen *North Carolina State University, Department of Poultry Science*

2:00 PM M136

Role of environmental noise on livability and behavior in young turkey poult

Junjie Yang^{*UG}, Catherine Fudge, Olivia Wedegaertner, Katherine Cupo, Frank Edens, Chongxiao (Sean) Chen *North Carolina State University*

Environment, Management and Animal Well-Being: Environmental Impacts

Moderators: Dr. Chongxiao (Sean) Chen, NCSU and Dr. Ahmed Ali, Clemson

Room Number: B315

Monday, January 24, 2022

2:15 PM M137

Achieving production gains by preventing pathogen proliferation and biofilm formation in the gastrointestinal tract of poultry

Michael Barnas*, James McNaughton, Mick Roberts *AHPharma, Inc.*

2:30 PM M138

Determination of bacterial pathogen diversity and prevalence in acidified re-used poultry litter during commercial live production

Adelumola Oladeinde*, Michael Rothrock, Charlene Jackson, Mark Berrang, Maggie Weinroth, Anthony Pokoo-Aikins, Anthony Glenn, Scott Gold *U.S. National Poultry Research Center, USDA-ARS*

2:45 PM M139

Evaluating Salmonella population dynamics in broiler flocks

Tomi Obe*, Nikki Shariat *University of Georgia*

3:00 PM M140

Impact of environmental enrichment on performance of commercial broiler

Muhammad Shahid Zahoor*¹, Sohail Ahmad¹, Muhammad Dawood², Murrawat Hussain¹, Muhammad Adeel Maqsood^{1,3}, Hafiz Rao Abdul Latif¹ *Department of Poultry Production, University of Veterinary and Animal Sciences, ²Department of Animal Breeding and Genetics, University of Veterinary and Animal Sciences, ³Department of Animal Nutrition, University of Veterinary and Animal Sciences*

3:15 PM M141

Light stimulation during incubation can influence hatching traits and post-hatch performance of broilers

Jibran Hussain*, Muhammad Faisal Riaz *Department of Poultry Production, University of Veterinary and Animal Sciences*

3:30 PM M142

Sustainable Nutrition: Crude protein reduction and balance amino acid profile keeps egg production performance in two different production systems and has reduced greenhouse gas emissions

Alexandre Rosa*¹, Márcio Pilecco¹, Angélica Londero¹, Andreas Lemme², Carlos de la Cruz², Nei Barbosa³ *Federal University of Santa Maria - UFSM, ²Evonik Operations GmbH | Nutrition & Care, ³Evonik Brazil*

3:45 PM M143

Evaluation of betaine hydrochloride on Lohman Brown layers 21-77 weeks of age; A Field Study

Kim Wilson*¹, Regina Harris², Michael Persia³, Lien Vande Maele¹ *Orffa Additives, B.V., ²Heritage Poultry Management Services, ³Virginia Tech*

4:00-6:00 PM

Poster Reception

Physiology, Endocrinology and Reproduction: Layer or Broiler Breeders

Moderators: Dr. Rocio Crespo, NCSU and Dr. Vivek Kuttappan, Novus International

Room Number: B311

Tuesday, January 25, 2022

7:45 AM T144

Maternal supplementation of trace mineral minerals on breeder production and progeny growth and health

Juxing Chen^{*1}, Raquel Araujo¹, Fabricia Roque², Guilherme Silva², Cristiane Araujo², Brunna Leite², Lúcio Araujo², David Torres¹, Mercedes Vazquez-Anon¹ ¹*Novus International Inc*, ²*Universidade de São Paulo*

8:00 AM T145

Effect of breeder age, egg storage length, and SPIDES on hatchability and embryo mortality of brown and leghorn layer breeders

Gustavo Quintana-Ospina¹, Maria Alfaro-Wisaquillo¹, Edgar Oviedo-Rondón^{*1}, Ian Rubinoff², Daniel Valbuena² ¹*North Carolina State University*, ²*HyLine International*

Physiology, Endocrinology and Reproduction: Turkeys

Moderators: Dr. Rocio Crespo, NCSU and Dr. Vivek Kuttappan, Novus International

Room Number: B311

Tuesday, January 25, 2022

8:15 AM T146

Using the i-STAT and the Vetscan VS2 analyzers to formulate age-specific whole blood biochemistry and gas reference intervals in brooder production turkeys

Zachary Adams, Rocio Crespo* *Department of Population Health and Pathobiology, College of Veterinary Medicine, North Carolina State University*

Metabolism and Nutrition: Vitamins and Minerals

Moderators: Dr. Rocio Crespo, NCSU and Dr. Vivek Kuttappan, Novus International
Room Number: B311

Tuesday, January 25, 2022

8:30 AM T147

Effects of the in ovo administration of L-ascorbic acid on the growth performance and incidence of eye lesions in broilers subjected to elevated levels of atmospheric ammonia

Ayoub Mousstaaid*¹, Saman Fatemi¹, Katie Elliott¹, Edgar Peebles¹, Joseph Purswell², William Miller³, Hammed Olanrewaju² ¹Mississippi State University, ²United States Department of Agriculture - ARS, ³Animal Ophthalmology Clinic

8:45 AM T148

Comparative efficacy evaluation of supplementing BioCholine and synthetic choline chloride on zootechnical performance in broilers

Sanjay Suradkar¹, Deepak Singare¹, Shivi Maini*², Prasad Nagpure² ¹r. B.V. Rao Institute of Poultry Management and Technology (IPMT), ²Indian Herbs Specialties

9:00 AM T149

Performance and immune parameters of broilers under Eimeria challenge and fed copper (I) oxide without antibiotic

Naiana Einhardt Manzke*¹, Alessandra Monteiro¹, Cristiane Araujo², Cristina Massoco Salles Gomes², Fabricia de Roque Arruda², Lucio Araujo² ¹Animine, ²University of Sao Paulo

9:15 AM T150

Effects of the in ovo administration of the Marek's Disease Vaccine alone or in combination with the in ovo and supplemental dietary administration of 25-hydroxyvitamin D3 on the performance and meat yield of Ross 708 broilers

Saman Fatemi*¹, Katie Elliott², April Levy³, Edgar Peebles¹ ¹Mississippi State University, ²USDA-ARS, ³DSM Nutritional Products

9:30 AM T151

Comparison of various nutritional programs in broiler birds under coccidiosis challenge

Vivek A Kuttappan*, Frances Yan, Juxing Chen, Deana Hancock, Mercedes Vazquez-Anon
Novus International, Inc.

9:45 AM T152

Effect of chelated zinc, copper and manganese on growth performance and gut health of broilers subjected to an Eimeria challenge

Juxing Chen*, Frances Yan, Bob Buresh, Melanie Roux, Mercedes Vazquez-Anon
Novus International Inc.

10:00 AM T153 WITHDRAWN

Incubation performance and chick quality of quail breeders supplemented with canthaxanthin and 25-hydroxycholecalciferol

Lucas Bonagurio*¹, Jessica Starkey¹, Charles Starkey¹, Flavia Cruz², Alice Murakami², Tatiana Santos² ¹Auburn University Department of Poultry Science, ²State University of Maringa Department of Animal Science

10:15 AM T154

Effect of 25-OH-D3 supplementation on bone characteristics and 25-OH-D3 serum concentration of broilers reared in different barn types

Carlos Lozano-Poveda*¹, Paola Hernández¹, Jairo Carvajal², Lucas Schmidt-Bassi³, Leticia Cardoso⁴, Claudia Silva⁴, Matheus de Paula-Reis⁵, Alex Maiorka³ ¹DSM Nutritional Products S.A., ²Italcol S.A., ³Universidade Federal do Paraná, ⁴DSM Nutritional Products, ⁵Universidade Estadual Paulista

10:30 AM T155

Effect of 25-OH-D3 supplementation and different dietary levels of available phosphorus on growth performance, bone characteristics and Vitamin D3 status of broilers

Lucas Schmidt-Bassi¹, Filipe Moreno¹, Carlos Lozano-Poveda², Claudia Silva³, Leticia Cardoso*³, Alex Maiorka¹ ¹Universidade Federal do Paraná, ²DSM Nutritional Products S.A., ³DSM Nutritional Products

10:45 AM T156

Evaluation of the effects of different 25-Hydroxyvitamin D3 sources in broiler chickens subject to a necrotic enteritis challenge

April Levy, Chasity Pender, Shelby Corray* *DSM Nutritional Products*

Dendy Keynote Speaker

Moderator: Dr. Christine Vuong, UARK

Room Number: B313

Tuesday, January 25, 2022

11:00 AM

COVID pandemic influences on broiler production

Bruce Stewart-Brown* *Perdue Foods*

12:00 PM SCAD Business Meeting

Room Number: B-312

12:00 PM SPSS Business Meeting

Room Number: B-314

SCAD

Moderator: Dr. Andrea Zedek, Zedek Poultry Consulting

Room Number: B312

Tuesday, January 25, 2022

8:00 AM T157

Comparison of ATP Bioluminescence to Traditional Colony Counting for Bacterial Enumeration of Treated and Non-treated Hatching Eggs

Rachel Thiemann^{*1GS}, Sue Ann Hubbard², Natalie Armour¹ ¹*Poultry Research and Diagnostic Laboratory, Mississippi State University*, ²*Merck Animal Health*

8:15 AM T158

Antibody response to Salmonella Enteritidis siderophore receptor and porin (SRP®) protein vaccines using a proprietary ELISA

Dan Domingo^{*1}, Keena Covert¹, Chris Parmer¹, Maryke Reed¹, Ramon Malheiros² ¹*Vaxxinova US*, ²*Prestage Department of Poultry Science, North Carolina State University*

8:30 AM T159

Evaluation of administration route, volume, and formulation of an autogenous Clostridium septicum (CS) bacterin-toxoid on humoral response against CS α -toxin in commercial turkeys

Aaron Forga^{*1GS}, B. Danielle Graham¹, Kabel Robbins², Andrew Smith², Roberto Cuesta¹, Callie Selby¹, Lesleigh Beer¹, Makenly Coles¹, Lucas Graham¹, Juan David Cardenas¹, Guillermo Tellez-Isaias¹, Christine Vuong¹, Billy Hargis¹ ¹*University of Arkansas*, ²*Butterball, LLC*

8:45 AM T160

The effects of possible alternative treatments for nematodes on egg production and quality

Maria Tereza Bethonico Terra^{*1GS}, Andrea Pietruska², Brett True¹, Kylee Hodgen³, Ruediger Hauck^{1,2} ¹*Department of Poultry Science, Auburn University*, ²*Department of Pathobiology, Auburn University*, ³*Department of Animal Science, Auburn University*

9:00 AM T161

Cellular immune responses to avian Clostridium perfringens isolates

Raveendra Kulkarni^{*}, Carissa Gaghan, Javid Mohammed *North Carolina State University*

9:15 AM T162

Evaluation of a nucleotide-rich yeast extract in a necrotic enteritis challenge model in broiler chickens

Matthew Jones^{*1}, Charles Hofacre¹, Sergi Segarra² ¹*Southern Poultry Research Group*, ²*Bioiberica SAU*

9:30 AM Break

SCAD

Moderator: Dr. Karen Grogan, UGA

Room Number: B312

Tuesday, January 25, 2022

9:45 AM T163

Duration of immunity of a recombinant HVT-IBD-ND vaccine against two different strains of velogenic NDV, and virulent and very virulent IBDV challenge

Sing Rong, Kelly Turner-Alston, Candyce Pacione, Tura Bru, Lauren Taylor*, Rut Vila, John Dickson, Jennifer Embrey, Alicia Molas *Zoetis*

10:00 AM T164

Construction, stability and efficacy of a recombinant HVT-IBD-ND vaccine against IBDV, NDV and MDV challenges

Sing Rong, Yugang Luo, Kelly Turner-Alston, Candyce Pacione*, Lauren Taylor, Tyler Brown, John Dickson, Jennifer Embrey *Zoetis*

10:15 AM T165

Protection studies of recombinant HVT-IBD against early AL2 challenge in SPF broilers

Kalen Cookson*, Manuel Da Costa, John Dickson, Jon Schaeffer *Zoetis*

10:30 AM T166

Comparison of Real-Time PCR and ELISA Surveillance for IBV in a Broiler Breeder Complex

Brian Jordan*, Sunny Cheng, Eric Shepherd *The University of Georgia*

Dendy Keynote Speaker

Moderator: Dr. Christine Vuong, UARK

Room Number: B313

Tuesday, January 25, 2022

11:00 AM

COVID pandemic influences on broiler production

Bruce Stewart-Brown* *Perdue Foods*

12:00 PM SCAD Business Meeting

Room Number: B-312

12:00 PM SPSS Business Meeting

Room Number: B-314

Metabolism and Nutrition: General Nutrition

Moderators: Dr. Ashley Wagner, Probiotech International and Dr. Carrie Walk, DSM Nutritional Products

Room Number: B313

Tuesday, January 25, 2022

7:30 AM T167

Effect of dietary supplementation of duckweed on egg quality and performance of Lohmann Brown layers offered commercial layer-based diet.

Debelu Bayu^{*1}, Chala Merera¹, Arega Feyera¹, Ulfina Galmessa^{2,1} *Ambo University, ²Ethiopian Institute of Agricultural Research*

7:45 AM T168

Effect of feeding *Spirulina platensis*, fenugreek seed as a functional feed ingredient on growth performance and oxidative stability in turkey meat

MSK Sarker^{*1,2}, F Sharmin¹, M A Rashid^{1,2,1} *Strengthening of Poultry Research and Development Project, Bangladesh Livestock Research Institute (BLRI), Savar, ²Poultry Production Research Division, BLRI, Savar, Dhaka, 1341*

8:00 AM T169

Effects of DDGS inclusion in the feed on broiler performance, digestibility and gut health

Gabriela Cardoso Dal Pont^{*1}, Cinthia Eyang², Cristiano Bortoluzzi³, Annah Lee¹, Yuhua Farnell¹, Michael Kogut^{4,1} *Texas A&M, ²Western Parana State University, ³DSM Nutritional Products, ⁴USDA-ARS Southern Plains Agricultural Research Center*

Metabolism and Nutrition: Enzymes, Feed Additives

Moderators: Dr. Ashley Wagner, Probiotech International and Dr. Carrie Walk, DSM Nutritional Products

Room Number: B313

Tuesday, January 25, 2022

8:15 AM T170

Studies for risk assessment of recombinant live therapeutics

Yiannis Kaznessis*, Kathryn Kruziki *General Probiotics Inc.*

8:30 AM T171

The effect of VANNIX™ C4 supplementation on turkey performance during a coccidial challenge

Karen Vignale*¹, Greg Mathis², Brett Lumpkins³ ¹*Kemin Animal Nutrition and Health*, ²*Southern Poultry Research, Inc.*, ³*Southern Poultry Feed & Research, Inc*

8:45 AM T172

Responses to high-fiber feed ingredients and dried fermentation product on growth performance, nutrient utilization, and gut microbiome of broiler chickens

Chan Sol Park*, Tingting Wang, Carmen Wickware, Timothy Johnson, Olayiwola Adeola *Purdue University*

9:00 AM T173

Evaluation of a novel proprietary feed additive to strengthen or substitute avilamycin growth promoter in broiler standard program

Angel-Rene Alfonso-Avila¹, Bertrand Medina², Ashley Wagner*², Ivan Girard², Marie-Pierre Letourneau-Montminy³ ¹*CRSAD (Centre de Recherche en Sciences Animale de Deschambault)*, ²*Probiotech International Inc.*, ³*Département des Sciences Animales, Université Laval*

9:15 AM T174

Growth performance and cecal microbiome profile of broilers fed diets containing a macroalgae blend.

Jason Sands*¹, Lauren Park², Douglas Currie², Augustine Owusu-Aseidu¹ ¹*Ocean Harvest Technology Ltd.*, ²*Roslin Nutrition Ltd.*

9:30 AM T175

Dietary addition of a macroalgae blend improves growth performance and changes the gastrointestinal microbiota profile of commercial broiler chickens.

Jason Sands*¹, Chongxiao Chen², Guanchen Liu², Augustine Owusu-Aseidu¹, Woo Kim² ¹*Ocean Harvest Technology Ltd.*, ²*Department of Poultry Science, University of Georgia*

9:45 AM T176

Effects of dietary supplement of natural calcium and phosphorus bioavailability enhancer (MagaCal) on performance, bone mineralization and serum calcium binding protein activity (Calbindin D9K) in broilers

Sudipto Haldar*, Anirvid Sarkar, Amrita Dhara, Shivaji Dey *Agrivet Consultancy*

10:00 AM T177

Evaluation of the digestible calcium equivalency of a novel *Citrobacter braakii* phytase

Carrie Walk*¹, Pauline Jenn², Jingcheng Zhang³, Raffaella Aureli², Shikui Wang³, Anaëlle Tschambser², Zhenzhen Wang³, Qian Zhang³ ¹*DSM Nutritional Products*, ²*DSM Nutritional Products, Research Center for Animal Nutrition and Health*, ³*DSM Nutritional Products, Animal Nutrition Research Center*

Processing and Products

Moderators: Dr. Ashley Wagner, Probiotech International and Dr. Carrie Walk, DSM Nutritional Products

Room Number: B313

Tuesday, January 25, 2022

10:15 AM T178

Efficacy of herbal supplements on performance, carcass characteristics and meat quality attributes of Broilers

Vijaya Bhaskar Reddy Gudapureddy*¹, Bhaskar Ganguly², Amaravathi Pidugu¹, Venkata Vivekananda Reddy Bandi¹ ¹*Sri Venkateswara Veterinary University*, ²*Department of Clinical Research, Ayurvet Limited, Baddi-173205, Himachal Pradesh, India.*

10:30 AM T179

Translocation and persistence of Salmonella in internal organs of broilers orally inoculated with varying doses of Salmonella cocktail

Jinquan Wang*, Davis Fenster, Sasikala Vaddu, Sujitha Bhumanapalli, Thiago Belem, Anju Singh, Rami Dalloul, Jasmine ` ` Kataria, Gaganpreet Sidhu, Courtney Leone, Manpreet Singh, Harshavardhan Thippareddi *University of Georgia*

Teaching, Pedagogy, Extension

Moderators: Dr. Ashley Wagner, Probiotech International and Dr. Carrie Walk, DSM Nutritional Products

Room Number: B313

Tuesday, January 25, 2022

10:45 AM T180

People Perception About Poultry Meat and Eggs in Punjab, Pakistan during COVID-19 Scenario
Murrawat Hussain*, Jibran Hussain, Sohail Ahmad, Muhammad Usman, Hafiz Rao Abdul Latif
Department of Poultry Production, University of Veterinary and Animal Sciences

Dendy Keynote Speaker

Moderator: Dr. Christine Vuong, UARK

Room Number: B313

Tuesday, January 25, 2022

11:00 AM

COVID pandemic influences on broiler production

Bruce Stewart-Brown* *Perdue Foods*

12:00 PM SCAD Business Meeting

Room Number: B-312

12:00 PM SPSS Business Meeting

Room Number: B-314

Metabolism and Nutrition: Enzymes, Feed Additives

Moderators: Dr. Rosana Hirai, TAMU and Dr. A. Bello, Danisco Animal Nutrition (IFF)

Room Number: B314

Tuesday, January 25, 2022

7:30 AM T181

Effects of direct-fed microbial products on growth performance, intestinal morphology, ileal amino acid digestibility, litter moisture, and footpad dermatitis of male broilers.

Rosana Hirai^{*1}, Austin Silva¹, Daniel De Leon¹, Garrett Powell¹, Macey Randig¹, Miloud Araba², Troy Lohrmann², Miguel Ruanos², Audrey McElroy¹ ¹*Department of Poultry Science, Texas A&M University*, ²*Quality Technology International, Inc.*

7:45 AM T182

Phage Endolysins as Alternative Antibiotics to Control Clostridia in Poultry

Michael Barnas^{*1}, Jennifer Timmons² ¹*AHPPharma, Inc.*, ²*University of Maryland Eastern Shore*

8:00 AM T183

Performance effects of either antibiotic growth promoters or functional oils in broilers challenged with coccidiosis

Priscila de Oliveira Moraes¹, Paula da Silva Pires², Douglas Haese³, Carolina d'Avila Pozzatti³, Joan Torrent^{*4} ¹*Dept. Zootecnia e Desenvolvimento Rural, UFSC*, ²*Dept. Zootecnia, UFRGS*, ³*Centro de Tecnologia Animal Ltda*, ⁴*Oligo Basics USA LLC*

8:15 AM T184

Evaluation of an encapsulated calcium butyrate on performance and necrotic enteritis mitigation in broiler chickens

Jinquan Wang^{*1}, Jundi Liu², Hanyi Shi¹, Amit Singh¹, Janghan Choi¹, Hanseo Ko¹, Luke Barnard², Brett Lumpkins³, Greg Mathis³, Woo Kim¹ ¹*University of Georgia*, ²*Eastman Chemical Company*, ³*Southern Poultry Feed & Research Inc*

8:30 AM T185

Effect of a proprietary plant extract-based product on weight gain, feed conversion, and intestinal lesions of Cobb 500 broilers during a mixed Eimeria challenge infection

Cody Flores^{*1}, Greg Mathis², Brett Lumpkins², Muhammed Shameer Abdul Rasheed¹, Kristy Dorton¹ ¹*Devenish Nutrition, LLC*, ²*Southern Poultry Feed and Research, Inc.*

8:45 AM T186

The effect of plant extracts, medium chain fatty acids, and their combination on broilers challenged with Necrotic enteritis.

Brian Glover^{*1}, Jose Charal¹, Milan Hruby¹, Michael Sims² ¹*Archer Daniels Midland Animal Nutrition*, ²*Virginia Diversified Research Corp.*

9:00 AM T187 WITHDRAWN

The incredible edible egg: dried egg product improves broiler growth performance after administration of cocci vaccines in the face of an Eimeria and necrotic enteritis challenge

Kimberly Livingston^{*1}, Nannette Olmeda-Geniec¹, Revathi Shanmugasundaram², Neil Baxter¹ ¹*Elanco Animal Health*, ²*USDA Agricultural Research Services*

9:15 AM T188

Natural prevention of coccidiosis and necrotic enteritis in experimentally infected broilers

David Diez^{*1}, Julia Pie¹, Anna Tesouro¹, Sudipto Haldar², Amrita Dhara² ¹*Biovet, S.A.*, ²*Agrivet Consultancy P Ltd.*

9:30 AM T189

Effect of Pichia guilliermondii inactivated whole yeast cell product on performance parameters, gastrointestinal tract gross lesion scores, and gut permeability in broilers experimentally challenged with coccidiosis

Mohamad Mortada^{*}, Amanda Hesse, Annalise Anderson *ADM Animal Nutrition*

9:45 AM T190

Effect of dietary supplementation of essential oil as an alternative to the use of antibiotic growth promoters in laying hens

Swanny Ramirez^{1,2}, Maria Ospina¹, Edgar Santos³, Paola Amaya-Hernandez¹, Julieth Ducuara-Suarez¹, Lina Peñuela-Sierra^{*1,2} ¹*Universidad del Tolima*, ²*Grupo de Investigación en Sistemas Agroforestales Pecuarios*, ³*NutrianSA*

10:00 AM T191

Effect of a precision glycan in broiler chickens under a necrotic enteritis challenge

Cristiano Bortoluzzi*, Joshua Claypool, April Levy, Shelby Corray, Jose Sorbara, Ghislain Schyns
DSM Nutritional Products

10:15 AM T192

M52, a novel natural feed additive, preserved mucosal immune and intestinal microbial homeostasis of broilers challenged with *Eimeria* spp.

Hongyu Xue*¹, Fernanda Rigo², Breno Beirão², Celso Fávoro², Max Ingberman² ¹*Amlan International*, ²*Imunova Análises Biológicas*

10:30 AM T193

Efficacy and phosphorus equivalency values are greater for a novel bacterial phytase compared with a commercial bacterial phytase in broilers from 8 to 21 days of age

Qian Zhang¹, Jose Otavio Sorbara*², Carrie Walk², Kostas Stamatopoulos² ¹*DSM China Animal Nutrition Research Center Co., Ltd, DSM Nutritional Products China*, ²*DSM Nutritional Products, Animal Nutrition and Health*

10:45 AM T194

Supplementation of a novel consensus bacterial 6-phytase variant in diets reduced in nutrients and energy and with no added inorganic phosphorus maintained egg productivity and egg quality

A. Bello*¹, E. White¹, Y. Dersjant-Li¹, D. C. Z. Donato², T. F. Moura³, M. Reis³, N. K. Sakomura³
¹*Danisco Animal University, IFF, Netherlands*, ²*Danisco Animal University, IFF, Brazil*, ³*School of Agricultural and Veterinarian Sciences, São Paulo State University (UNESP) Jaboticabal*

Dendy Keynote Speaker

Moderator: Dr. Christine Vuong, UARK

Room Number: B313

Tuesday, January 25, 2022

11:00 AM

COVID pandemic influences on broiler production

Bruce Stewart-Brown* *Perdue Foods*

12:00 PM SCAD Business Meeting

Room Number: B-312

12:00 PM SPSS Business Meeting

Room Number: B-314

Metabolism and Nutrition: Enzymes, Feed Additives

Moderators: Dr. Michael Barnas, AHPharma, Inc. and Dr. April Levy, DSM Nutritional Products
Room Number: B315

Tuesday, January 25, 2022

7:30 AM T195

Supplementation of a novel consensus bacterial 6-phytase variant at 750 and 1,500 FTU/kg cost-effectively maintained growth performance of broilers fed corn-SBM diets from 1-42 days of age

Katie Hilton^{*1}, Abiodun Bello², Yueming Dersjant-Li², Eric Sobotik³, Gregory Archer³, Franco Mussini², Janet Remus² ¹Danisco Animal Nutrition, IFF, ²Danisco Animal Nutrition, IFF, ³Texas A&M University

7:45 AM T196

A novel consensus bacterial 6-phytase variant maintained performance in broilers fed corn-SBM diet without added inorganic P and deficient in nutrients and energy

Leon Marchal^{*1,2}, Abiodun Bello¹, Yueming Dersjant-Li¹, Janet Remus³, Eric Sobotik⁴, Gregory Archer¹ ¹Danisco Animal Nutrition (IFF), ²Wageningen University & Research, ³Danisco Animal Nutrition, IFF, ⁴Texas A&M University

8:00 AM T197

Accumulation of fumonisins in broiler tissues with or without feeding algae-clay based technology

Julia Laurain¹, Didier Tardieu², Maria Matard-Mann¹, Maria Angeles Rodriguez^{*1}, Philippe Guerre² ¹Olmix Group, ²National Veterinary School of Toulouse, ENVT, University of Toulouse

8:15 AM T198

Effect of supplementation of a mycotoxin mitigation product on performance and aflatoxin metabolism in broilers fed mycotoxin contaminated diets

Sangita Jalukar^{*1}, Yong Fang², Feifei Han², Yutong Fu², Jinglin Ma², Lihong Zhao² ¹Arm and Hammer Animal and Food Production, ²State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University

8:30 AM T199

Metabolites produced by the probiotic *Bacillus subtilis* 29784 strengthen intestinal barrier, modulate inflammatory response and gut environment

Damien Preveraud^{*1}, Eric Pinloche², Richard Ducatelle, Filip Van Immerseel, Estelle Devillard¹ ¹Adisseo France SAS, ²Adisseo France

8:45 AM T200

A220, an all-natural feed additive, reduced *Salmonella* intestinal colonization in broilers and tuned down SPI-1 Type III Secretion System (TTSS) virulence machinery

Hongyu Xue^{*1}, Dongping Wang¹, Sara Johnston¹, Billy Hargis², Guillermo Tellez² ¹Amlan International, ²Department of Poultry Science, University of Arkansas

9:00 AM T201

The effects of in-feed technology (Lumance®) on growth performance and inflammatory gene expression in broiler under dietary challenge

Alireza Khadem^{1,2}, DON Ritter^{*2}, Christos Gougoulis² ¹Ghent University, ²Innovad SA

9:15 AM T202

Evaluation of the performance benefits of Balancius in different feeding programs in 56-day old broilers

April Levy^{*}, Shelby Corray, Doug Teitge

9:30 AM T203

Effect of a proprietary yeast-based product on weight gain, feed conversion, and carcass yield of Ross 708 broilers

Chris Rude^{*}, Muhammed Shameer Abdul Rasheed, Kristy Dorton *Devenish Nutrition, LLC*

9:45 AM T204

Effect of guanidinoacetic acid on the diet of broilers on productive and economic parameters.

Jose Rivera Ulloa^{*1}, Marcela Moreno², Miguel Hernandez², Jairo Carvajal², Judith Ringel³, Vivienne Inhuber³ ¹University of Sao Paulo - Brazil, ²Italcol, ³Alzchem Trostberg GmbH

10:00 AM T205

Centrifugation Method Affects Digesta Viscosity

Michael Barnas*¹, Jennifer Timmons², Caleb Nindo² ¹*AHPharma, Inc.*, ²*University of Maryland Eastern Shore*

10:15 AM T206

Effect of dietary *Moringa oleifera* and Linseed in producing eggs enriched with omega 3 fatty acids and lower cholesterol

F Sharmin*^{1,2}, M. S. K. Sarker^{1,2}, NR Sarker^{1,2,3} ¹*Strengthening of Poultry Research and Development Project, Bangladesh Livestock Research Institute (BLRI)*, ²*Poultry Production Research Division*, ³*Krishi Gobeshona Foundation, BARC Campus, Farmgate*

Environment, Management and Animal Well-Being: Stress Responses, Behavior

Moderators: Dr. Michael Barnas, AHPharma, Inc. and Dr. April Levy, DSM Nutritional Products

Room Number: B315

Tuesday, January 25, 2022

10:30 AM T207

Impact of body-worn sensors on broiler chicken behavior and agonistic interactions

Gracie Anderson*, Alexa Johnson, Ahmed Ali *Clemson University*

10:45 AM T208

Resource use of free-range laying hens in response to a mobile robot

Alexa Johnson*, Gracie Anderson, Ahmed Ali *Clemson University*

Dendy Keynote Speaker

Moderator: Dr. Christine Vuong, UARK

Room Number: B313

Tuesday, January 25, 2022

11:00 AM

COVID pandemic influences on broiler production

Bruce Stewart-Brown* *Perdue Foods*

12:00 PM SCAD Business Meeting

Room Number: B-312

12:00 PM SPSS Business Meeting

Room Number: B-314

Poster Sessions

Teaching, Pedagogy, Extension

Moderators: Dr. Anuraj Sukumarna, MSSTATE and Dr. Sara Orlowski, UARK

Room Number: B313 Foyer

4:00 PM- 6:00 PM P209

Quantification of non-commercial poultry shipments into Kentucky

Jennifer Hall¹, Caroline Meek¹, Anthony Pescatore^{*2} ¹*Kentucky Poultry Federation*, ²*University of Kentucky*

Physiology, Endocrinology and Reproduction: Broilers

Moderators: Dr. Anuraj Sukumarna, MSSTATE and Dr. Sara Orlowski, UARK

Room Number: B313 Foyer

4:00 PM- 6:00 PM P210

Antibiotic supplementation improves jejunal tissue damage during a subclinical necrotic enteritis challenge in broilers

Shailes Bhattra^{*6S}, Laura E. Ellestad *University of Georgia*

4:00 PM- 6:00 PM P211

Investigating the effect of genetic selection on growth performance and intestinal density in three random bred broiler populations

Maricela Maqueda^{*6S}, Kirsten Shafer, Travis Tabler, Sara Orlowski *Department of Poultry Science, University of Arkansas*

4:00 PM- 6:00 PM P212

Effect of cyclic heat stress on the hypothalamic oxygen homeostasis and inflammatory state in different broiler populations and their ancestor

Giorgio Brugaletta^{*1,2}, Elizabeth Greene², Travis Tabler², Sara Orlowski², Federico Sirri¹, Sami Dridi² ¹*Department of Agricultural and Food Sciences, Alma Mater Studiorum — University of Bologna*, ²*Center of Excellence for Poultry Science, University of Arkansas*

4:00 PM- 6:00 PM P213

A Thermal Imaging Method for Evaluating Broiler Growth Parameters

Yangyang Guo¹, Ade Oladeinde^{1,2}, Romdhane Rekaya³, Ahmed Ghareeb¹, James Foutz¹, Gregory Zock¹, Ramesh Bist¹, Samuel Aggrey¹, Lilong Chai^{*1} ¹*Department of Poultry Science, University of Georgia*, ²*U.S. National Poultry Research Center, USDA ARS*, ³*Department of Animal and Dairy Science, University of Georgia*

Physiology, Endocrinology and Reproduction: Laying Hens

Moderators: Dr. Anuraj Sukumarna, MSSTATE and Dr. Sara Orlowski, UARK

Room Number: B313 Foyer

4:00 PM- 6:00 PM P214

Effect of mixed Eimeria challenge on skeletal health of Hy-Line W-36 pullets

Milan Sharma^{*6S}, Dima White, Yuguo Tompkins, Guanchen Liu, Woo Kim *Department of Poultry Science, University of Georgia*

Physiology, Endocrinology and Reproduction: Layer or Broiler Breeders

Moderators: Dr. Anuraj Sukumarna, MSSTATE and Dr. Sara Orlowski, UARK

Room Number: B313 Foyer

4:00 PM- 6:00 PM P215

Primary and secondary immune responses in Light-brown Leghorn pullets vaccinated with autogenous Salmonella vaccines

Chrysta Beck^{*6S}, Jossie Santamaria, Marites Sales, Gisela Erf *University of Arkansas System, Division of Agriculture, Department of Poultry Science*

4:00 PM- 6:00 PM P216

Effect of *Histomonas meleagridis* infection during the onset of lay on mortality and egg production in broiler breeders.

Sophie Chance^{*UG}, Catherine Fudge, Katherine Cupo, Benjamin Alig, Robert Beckstead, Chongxiao (Sean) Chen *North Carolina State University*

Physiology, Endocrinology and Reproduction: Turkeys

Moderators: Dr. Anuraj Sukumarna, MSSTATE and Dr. Sara Orlowski, UARK

Room Number: B313 Foyer

4:00 PM- 6:00 PM P217

The detection of antibody responses to histomoniasis in turkeys.

Sophie Chance^{*1}, Paige Rohlf², Christina Sigmon¹, Robert Beckstead¹, Chongxiao (Sean) Chen¹
¹*North Carolina State University*, ²*Aviagen Turkey*

Processing and Products

Moderators: Dr. Anuraj Sukumarna, MSSTATE and Dr. Sara Orlowski, UARK

Room Number: B313 Foyer

4:00 PM- 6:00 PM P218

The biofilm forming ability of different *Salmonella* serotypes on stainless steel

Hudson Thames^{*GS}, Diksha Pokhrel, Anuraj Sukumaran *Mississippi State University*

4:00 PM- 6:00 PM P219

Relative resistance of *Salmonella* serotypes (Typhimurium, Infantis and Reading) to peroxyacetic acid on chicken wings

Sasikala Vaddu^{*GS}, Jinquan Wang, Thiago Belem, Gaganpreet Sidhu, Cortney Leone, Manpreet Singh, Harshavardhan Thippareddi *Department of Poultry Science, University of Georgia*

4:00 PM- 6:00 PM P220

Rapid quantification in *Salmonella* spp. in artificially and naturally contaminated ground turkey using a real-time PCR assay

Micah Black^{*1GS}, Bet Wu Alvarado¹, Laura Garner¹, Charles Herron¹, Aftab Siddique¹, Adam Joelsson², Vikrant Dutta³, Heath LaFevers³, John Mills³, Amit Morey¹
¹*Auburn University*, ²*Invisible Sentinel*, ³*bioMérieux, Inc.*

4:00 PM- 6:00 PM P221

Rapid Detection of Woody Breast Myopathy in Live Birds, Pre- and Post-Chill WOGs, and Fillets Using Radio-frequency Waves and Machine Learning Algorithms

Aftab Siddique^{*1GS}, Charles Herron¹, Laura Garner¹, Amit Morey¹, Ryan Freeman²
¹*Auburn University*, ²*Compass Technology Group, LLC*

4:00 PM- 6:00 PM P222

Efficacy of room-temperature plasma to eliminate foodborne pathogens in ground and ready-to-eat meat

Bet Wu^{*1GS}, Emefa Monu², Shijie Qin¹, Amit Morey¹
¹*Department of Poultry Science Building, Auburn University*, ²*Ontario Ministry of Agriculture, Food and Rural Affairs*

4:00 PM- 6:00 PM P223

Replacing "First-In First-Out" model with "First-Expire First-Out" to predict shelf-life of raw chicken in each box on a pallet under simulated cold-chain disruption

Charles Herron^{*GS}, Telah Black, Aftab Siddique, Laura Garner, Bet Wu, Jewel Johnson, Moni Fadamiro, Amit Morey *Auburn University*

4:00 PM- 6:00 PM P224

Comparison of leg parameters in embryonic chicks from three broiler lines and an inbred Junglefowl line.

Annie Lozano^{*1GS}, Monica Franco¹, Sara Orlowski², Katy Tarrant¹
¹*California State University, Fresno*, ²*University of Arkansas*

4:00 PM- 6:00 PM P225

Effect of application method of a formaldehyde-based feed antimicrobial on efficacy and safety

Dillon Mellick^{*}, Adam Cannon, Arlene Lamptey, D.J. Wolett, Brenda Reid, Stephen Klein *Kemin Industries*

4:00 PM- 6:00 PM P226

The effects of potassium ferrate (VI) and water rinse on the pH and color of chicken breast meat
Wendy Attuquayefio*, Michael Barnas, Skyler Lewis, James McNaughton *AHPharma Inc.*

4:00 PM- 6:00 PM P227

The effect of size on the physical characteristics of eggs in different storage conditions
Sara Alcobia, Cátia Martins, Madalena Lordelo* *LEAF—Linking Landscape, Environment, Agriculture and Food - Research Center, Instituto Superior de Agronomia, University of Lisbon*

4:00 PM- 6:00 PM P228

Physical, chemical and sensory analysis of brown vs white shelled eggs
Pedro Sousa, Cátia Martins, Luísa Louro, Miguel Mourato, Suzana Ferreira-Dias, Madalena Lordelo* *LEAF - Linking Landscape, Environment, Agriculture and Food - Research Center, Instituto Superior de Agronomia, University of Lisbon*

4:00 PM- 6:00 PM P229

Eggs from native and hybrid chickens — physical characteristics during storage
Filipa Guerreiro¹, Inês Carolino², Virginia Ribeiro³, Madalena Lordelo*¹ *LEAF - Linking Landscape, Environment, Agriculture and Food - Research Center, Instituto Superior de Agronomia, University of Lisbon*, ²INIAV - Instituto Nacional de Investigação Agrária e Veterinária, ³AMIBA - Associação dos Criadores de Bovinos de Raça Barrosã

Pathology

Moderators: Dr. Anuraj Sukumarna, MSSTATE and Dr. Sara Orłowski, UARK

Room Number: B313 Foyer

4:00 PM- 6:00 PM P230

Duck viral enteritis in domestic Muscovy ducks from an Ohio backyard flock
Emma Kline*^{1GS}, Gavin Hitchener² *1Cornell University College of Veterinary Medicine, 2Cornell University Duck Research Laboratory*

4:00 PM- 6:00 PM P231

Tau cells of ducks — a plasmacyte form with a convoluted nucleus
Paul Cotter*¹, Ben Fetrow² *1Cotter Laboratory, 2Maple Leaf Farms*

4:00 PM- 6:00 PM P232

Effect of atmospheric ammonia and hardwood dust on the performance and respiratory integrity of broiler chickens
Dorian Dominguez*, Daniel Hofstetter, Vinicius Buiatte, Alberto Gino Lorenzoni *The Pennsylvania State University*

4:00 PM- 6:00 PM P233

Autophagy Machinery is Dysregulated in Bacterial Chondronecrosis with Osteomyelitis (BCO) broilers
Alison Ramser*^{1,2}, Elizabeth Greene¹, Robert Wideman¹, Adnan Alrubaye^{1,2}, Sami Dridi^{1,2}
1University of Arkansas, Center of Excellence for Poultry Science, 2University of Arkansas, Cell and Molecular Biology

4:00 PM- 6:00 PM P234

Evaluating the accuracy of virulent genes model in predicting the source of extraintestinal *Escherichia coli* isolates, collected from colibacillosis infected or healthy layer chicken
Fozol Ovi*^{GS}, Li Zhang, Pratima Adhikari *Mississippi State University*

4:00 PM- 6:00 PM P235

Diagnosis of osteopenic and osteomegalic diseases in broilers submitted to different vitamin D3 dietary levels
Tainá Lopes*^{GS}, Mariana Vasconcelos, Isadora Araújo, Lorena Sousa, Bruno Bertassoli, Natália Ocarino, Leonardo Lara, Rogeria Serakides, Itallo Araújo *Universidade Federal de Minas Gerais*

4:00 PM- 6:00 PM P236

In-vitro evaluation of plant bio-actives against *Histomonas meleagridis*
Thibaut Chabrilat, Claire Carlu, Nathalie Bonal*, Claire Girard, Sylvain Kerros *Phytosynthese*

4:00 PM- 6:00 PM P237

Effect of phytogetic formulation (Animunin) against Newcastle disease virus (NCD) and Infectious bursal disease virus (IBD) of poultry: in vitro assay of cytopathic effect in chicken embryo fibroblast (CEF) cell culture

Neeraj Gangwar*¹, Ajay Singh², Soumen Choudhary³, Shivi Maini⁴ ¹*Department of Veterinary Pathology, College of Veterinary Science & AH, DUVASU*, ²*Department of Veterinary Microbiology, College of Veterinary Science & AH, DUVASU*, ³*Department of Pharmacology and Toxicology, College of Veterinary Science & AH, DUVASU*, ⁴*Indian Herbs Specialities*

4:00 PM- 6:00 PM P238

Immunomodulatory effect of phytogetic formulation against Newcastle disease virus (NCD) and Infectious bursal disease virus (IBD) of poultry

Neeraj Gangwar¹, Ajay Singh^{2,3}, Soumen Choudhary³, Shivi Maini*⁴ ¹*Department of Veterinary Pathology, College of Veterinary Science & AH, DUVASU*, ²*Department of Veterinary Microbiology, College of Veterinary Science & AH, DUVASU*, ³*Department of Pharmacology and Toxicology, College of Veterinary Science & AH, DUVASU*, ⁴*Indian Herbs Specialities*

4:00 PM- 6:00 PM P239

Onset of Immunity of a Recombinant HVT-IBD-ND Vaccine Against a Classic IBDV, a Very Virulent IBDV, and Two Velogenic NDV challenges

Sing Rong*, Tura Bru, Kelly Turner-Alston, Candyce Pacione, Lauren Taylor, Rut Vila, John Dickson, Jennifer Embrey, Alicia Molas *Zoetis - VMRD*

4:00 PM- 6:00 PM P240

Evaluation of protection by ND vaccination protocols against early challenge with Velogenic Newcastle virus-VII.1

Wael Elfeil*¹, Mahamed Rady², Walid Kilany², Ahmed Sedeik², Magdy Elkady³, Magdy Elsayed^{4,5} ¹*Suez Canal University*, ²*Agriculture Research Center*, ³*Beni-Suef University*, ⁴*Cairo University*, ⁵*Middle East for Veterinary Vaccine Company (MEVAC)*

4:00 PM- 6:00 PM P241

Evaluation protection of H5 vaccination regimes against early challenge with HPAI-H5N1

Wael Elfeil*¹, Mohamed Rady², Walid Kilany², Ahmed Sedeik², Magdy Elkady³, Magdy Elsayed^{4,5} ¹*Suez Canal University*, ²*Agriculture Research Center*, ³*Beni-Suef University*, ⁴*Cairo University*, ⁵*Middle East for Veterinary Vaccine Company (MEVAC)*

4:00 PM- 6:00 PM P242

Effect of co-infection of low pathogenic avian influenza H9N2 virus and Avian pathogenic E. coli on H9N2 vaccinated commercial broiler chickens.

Wael Elfeil*¹, Sherif Mahmoud², Mohamed Hamoud³, Kamel Zyan², Eman Khalifa⁴, Shahin Dardir⁵, Rabab Khalifa⁵, Walid Kilany⁶ ¹*Suez Canal University*, ²*Benha University*, ³*Cairo University*, ⁴*Matrouh Univeristy*, ⁵*Cairo Poultry Corporate*, ⁶*Agriculture Research Center*

4:00 PM- 6:00 PM P243

Evaluation of circulatory mRNA abundance of pro-inflammatory and regulatory cytokines and receptors during a subclinical necrotic enteritis challenge

Laney Froebel*^{GS}, Nima Emami, Rami Dalloul *University of Georgia*

4:00 PM- 6:00 PM P244

Histomoniasis associated bursal pathology in turkeys

Vijay Durairaj*¹, Mary Drozd², Deborrah Higuchi¹, Ryan Vander Veen¹ ¹*Huvepharma, Inc*, ²*University of Nebraska-Lincoln*

4:00 PM- 6:00 PM P245

RNA-Seq analysis of local host response to Eimeria maxima infection in broiler chickens

Ahmed Ghareeb*¹, James Foutz¹, Gustavo Schneiders², Marie Milfort¹, Alberta Fuller¹, Romdhane Rekaya³, Samuel Aggrey¹ ¹*Department of Poultry Science, University of Georgia*, ²*Merck & Co., Inc.*, ³*Department of Animal and Dairy Science, University of Georgia*

4:00 PM- 6:00 PM P246

The effect of a whole yeast product and two plant extracts supplemented alone or combined on broiler performance, lesions scores, and oocyst shedding during an experimental coccidia challenge.

Jose Charal*¹, Chet Wiernusz², Brian Glover¹, Milan Hruby¹, Annalise Anderson¹ ¹*ADM Animal Nutrition*, ²*NutriQuest*

4:00 PM- 6:00 PM P247

Comparative efficacy of ionophores anticoccidial agents (Maduramicin and Salinomycin), an anticoccidial vaccine and a multistage anticoccidial agent of phylogenetic origin (ZeeCox) in controlling avian coccidiosis (*Eimeria tenella*)

Angan Roy*¹, Dr. Jayanta Chatterjee², Paresh Chatterjee³ ¹*P.hD Scholar, Department of Animal Science, Vishwa Bharti University,* ²*Associate Professor, Dept of Animal Science, Vishwa Bharti University,* ³*Assistant Professor, Animal Nutrition, WBUAFS*

SCAD

Moderators: Dr. Anuraj Sukumarna, MSSTATE and Dr. Sara Orlowski, UARK

Room Number: B313 Foyer

4:00 PM- 6:00 PM P248

Evaluation of the performance of different Nicarbazin-potentiated ionophores in the presence of a strict coccidia challenge

Luis Gomez*¹, Patricia Rocha¹, Ken Bafundo¹, Tim Buisker², Douglas Haese³ ¹*Phibro Animal Health Corporation,* ²*Smart Data Science Solutions,* ³*Centro de Tecnologia Animal Ltda*

4:00 PM- 6:00 PM P249

Further analysis of computerized methods for *Eimeria* spp. enumeration

Cameron Ellington*^{1GS}, Zachary Adams¹, Daniel Adams², Rocio Crespo¹ ¹*North Carolina State University,* ²*University of Georgia*

4:00 PM- 6:00 PM P250

Characterization of vaccine-induced immune responses against coccidiosis in broiler chickens

Carissa Gaghan*¹, Daniel Adams², Rocio Crespo¹, Kimberly Livingston³, Raveendra Kulkarni¹ ¹*North Carolina State University,* ²*University of Georgia,* ³*Elanco*

4:00 PM- 6:00 PM P251

Survey of anticoccidial sensitivity and species of *Eimeria* affecting turkey farms in USA

Hafiz Abdullah*^{GS}, Audrey Duff, Kaylin Chasser, Johel Bielke, Kate McGovern, Michael Trombetta, Whitney Briggs, Lisa Bielke *The Ohio State University*

4:00 PM- 6:00 PM P252

Impact of dietary supplementation of Magni-Phi® Ultra on intestinal permeability during a coccidia challenge and feed restriction in broiler chickens

Saheed Osho*, Kari Saddoris-Clemons, Brooke Humphrey, Miriam Garcia-Orellana *Phibro Animal Health Corporation*

4:00 PM- 6:00 PM P253

Prevalence of multi-serotype *Salmonella* populations in southeastern breeder flocks

Amy Sicheloff*^{1GS}, Nikki Shariat¹, Doug Waltman² ¹*Department of Population Health, University of Georgia,* ²*Georgia Poultry Laboratory Network*

4:00 PM- 6:00 PM P254

A laboratory evaluation of a tablet chlorine dioxide (Dutrien) to stabilized sodium chlorite in reducing *Salmonella* enteritidis in drinker lines

Nathaniel Ollis*¹, Charles Hofacre¹, Virginia Baxter¹, Dale Green², Chet Wiernusz² ¹*Southern Poultry Research Group,* ²*Nutriquest*

4:00 PM- 6:00 PM P255

Dietary inclusion of Diamond V Original XPC postbiotic is associated with reduced cecal *Salmonella* prevalence and loads in Honduran broilers

William Chaney*¹, Manuel Gutierrez², Abel Gernat¹, Arlene Fosmer¹, Timothy Johnson¹ ¹*Diamond V, Cargill Health Technologies,* ²*Agrinvet Laboratorio*

4:00 PM- 6:00 PM P256

Growth performance of broiler chickens after oral inoculation with different doses of *Salmonella* spp.

Davis Fenster*, Candice Blue, Nima Emami, Laney Froebel, Jake Yarnall, Jinquan Wang, Harshavardhan Thippareddi, Rami Dalloul *University of Georgia*

4:00 PM- 6:00 PM P257

Comparison of two live Salmonella Typhimurium vaccine programs in a commercial broiler field trial

Manuel Da Costa*, Kalen Cookson, Jon Schaeffer *Zoetis - U.S. Poultry*

4:00 PM- 6:00 PM P258

Two methods of Escherichia coli challenge to evaluate prevention of airsacculitis

Virginia Baxter*, Michelle Carrier, Charles Hofacre *Southern Poultry Research Group*

4:00 PM- 6:00 PM P259

Reduction in Clostridium perfringens and Escherichia coli levels in litter following treatment with a spray-on, Bacillus-based litter amendment product

Jodi Delago*, Zachary Zawada, Mueez Ahmad, Shannon Burasco, Thomas Rehberger, Alexandra Smith *Arm & Hammer Animal & Food Production*

4:00 PM- 6:00 PM P260

Application of 16S rRNA sequencing technology to assess broiler microbiome robustness in commercial field analyses

John Schleifer*, Tomasz Cieplak, Dorthe Sandvang, Jean-Christophe Bodin, Stephanie Frankenbach, Christophe Bostvironnois *Chr. Hansen A/S*

4:00 PM- 6:00 PM P261

Compatibility of a recombinant HVT-IBD vaccine with CVI to provide protection against very virulent Marek's and very virulent IBDV challenge in SPF birds

Amy Brown, Lauren Taylor*, Megan Bosserd, John Dickson, Jennifer Embrey, Angela Hartman *Zoetis*

4:00 PM- 6:00 PM P262

A systematic review of pathobiological studies of Goose-Guangdong lineage of high pathogenicity H5 influenza viruses in various avian species

Christina Leyson*, Sungsu Youk, Mary Pantin-Jackwood *Southeast Poultry Research Laboratory, United States National Poultry Research Center, Agricultural Research Service, United States Department of Agriculture*

Environment, Management and Animal Well-Being: Environmental Impacts

Moderators: Dr. Anuraj Sukumarna, MSSTATE and Dr. Sara Orlowski, UARK

Room Number: B313 Foyer

4:00 PM- 6:00 PM P263

Effects of Cyclic Chronic Heat Stress on the Expression of Nutrient Transporters in the Jejunum of Modern Broilers and Their Ancestor Wild Jungle Fowl

Alison Ramser*^{2,3}, Nedra Abdelli¹, Elizabeth Greene², Lesleigh Beer², Travis Tabler², Sara Orlowski², Jose Perez¹, David Solà-Oriol¹, Nicholas Anthony², Sami Dridi^{2,3} ¹*Universitat Autònoma de Barcelona, Department of Animal and Food Sciences*, ²*University of Arkansas, Center of Excellence for Poultry Science*, ³*University of Arkansas, Cell and Molecular Biology*

4:00 PM- 6:00 PM P264

The effect of Spirulina platensis inclusion on live performance and meat quality of commercial broilers subjected to cyclic heat stress

Kirsten Shafer*^{6S}, Garrett Mullenix, Maricela Maqueda, Travis Tabler, Kentu Lassiter, Walter Bottje, Michael Kidd, Sara Orlowski *University of Arkansas*

4:00 PM- 6:00 PM P265

Effects of alum and acidified bamboo biochar on nitrogen loss from broiler litter during storage

S.K.P.M Siriwardana, N.S.B.M Atapattu* *Department of Animal Science, Faculty of Agriculture, University of Ruhuna*

4:00 PM- 6:00 PM P266

Effect of Colored LEDs Illumination on the Egg Production, Reproductive Hormone, Immunoglobulin G, and Behavior of Broiler Breeder Hens

Chun Ik Lim*¹, Se Youn Cha², Hyung Kwan Jang², Kyeong Seon Ryu¹ ¹*Department of Animal Science, Jeonbuk National University*, ²*Department of Veterinary Science, Jeonbuk National University*

4:00 PM- 6:00 PM P267

Evaluation of antimicrobial and heavy-metal resistance patterns of avian pathogenic *Escherichia coli* associated with broiler breeder colibacillosis in Mississippi
Jiddu Joseph*^{GS}, Madalyn Jennings, Li Zhang, Pratima Adhikari, Reshma Ramachandran
Mississippi State University

4:00 PM- 6:00 PM P268

The impact of broiler genetics and *Salmonella* exposure on the ileal and cecal microbiome
Tessa Sheets*^{1GS}, Carmen Wickware¹, Shawna Weimer², Timothy Johnson¹ ¹*Purdue University*,
²*University of Maryland*

4:00 PM- 6:00 PM P269

A Multiplex PCR Workflow for Quantification of *Salmonella* in Food Matrices
Matthew Hahs* *Thermo Fisher Scientific*

4:00 PM- 6:00 PM P270

Survey of electrical grounding systems for commercial broiler houses in Mississippi and Alabama
Matthew Rowland*^{1GS}, Daniel Chesser¹, John Linhoss², Joseph Purswell³, Jesse Campbell²,
Jeremiah Davis² ¹*Mississippi State University*, ²*Auburn University*, ³*USDA Agricultural Research Service - Poultry Research Unit*

4:00 PM- 6:00 PM P271

Evaluating the effect of circulation fans on broiler footpad dermatitis severity in commercial houses
Zoie McMillian*^{1GS}, Anna Magnaterra¹, Ashlyn Snyder¹, Gregory Martin², Jonathan Moyle³,
Shawna Weimer¹ ¹*University of Maryland, College Park*, ²*Penn State Extension*, ³*University of Maryland Extension*

4:00 PM- 6:00 PM P272

Assessment of water meter accuracy in commercial broiler houses
Evan Johnson*^{1UG}, Jeremiah Davis¹, Jesse Campbell¹, Joseph Purswell², Martha Rueda¹, Carson Edge¹, Kelly Griggs¹, Cody Smith¹ ¹*National Poultry Technology Center at Auburn University*,
²*USDA ARS Poultry Research Unit*

4:00 PM- 6:00 PM P273

Survey of gas line leaks in commercial broiler houses
Baylor Arnold*^{1UG}, Jeremiah Davis¹, Jesse Campbell¹, Joseph Purswell², Carson Edge¹, Martha Rueda¹, Kelly Griggs¹, Cody Smith¹ ¹*National Poultry Technology Center at Auburn University*,
²*USDA ARS Poultry Research Unit*

4:00 PM- 6:00 PM P274

Assessment of static pressure accuracy in commercial broiler houses
Juliana Rezek*^{1UG}, Jeremiah Davis¹, Jesse Campbell¹, Joseph Purswell², Carson Edge¹, Kelly Griggs¹, Martha Rueda¹, Cody Smith¹ ¹*National Poultry Technology Center at Auburn University*,
²*USDA ARS Poultry Research Unit*

4:00 PM- 6:00 PM P275

Assessment of temperature sensor accuracy in commercial broiler houses
Leah Smith*^{1UG}, Jeremiah Davis¹, Jesse Campbell¹, Joseph Purswell², Carson Edge¹, Martha Rueda¹, Kelly Griggs¹, Smith Cody¹, John Linhoss¹ ¹*National Poultry Technology Center*, ²*USDA ARS Poultry Research Unit*

4:00 PM- 6:00 PM P276

Survey of light uniformity in commercial broiler houses
Abigail Lane*^{1UG}, Jeremiah Davis¹, Carson Edge¹, Jesse Campbell¹, Joseph Purswell², Kelly Griggs¹, Martha Rueda¹, Smith Cody¹, John Linhoss¹ ¹*National Poultry Technology Center*,
²*USDA ARS Poultry Research Unit*

4:00 PM- 6:00 PM P277

Impact of eggshell disinfection on the bacterial load and microbiome of broiler hatching eggs
John Linhoss*¹, Maryam Mohammadi-Aragh², Evans Jeff³ ¹*National Poultry Technology Center*,
²*Mississippi State University Agricultural & Biological Engineering Department*, ³*USDA ARS Poultry Research Unit*

4:00 PM- 6:00 PM P278

Effect of Far Infrared Ray Illumination on the Performance, Blood Biochemistry, Behavior and Fecal Microflora of Laying Hens at Different Production Stages

Chun Ik Lim^{*1}, Chang Won Kang², Kyeong Seon Ryu¹ ¹*Department of Veterinary Science, Jeonbuk National University*, ²*Department of Animal Science, Jeonbuk National University*

4:00 PM- 6:00 PM P279

Effect of age at photo-stimulation on performance, egg quality, reproductive performance, and skeletal properties of laying hens

Amin Rahimi^{*1GS}, Prafulla Regmi², Kenneth Anderson¹ ¹*North Carolina State University*, ²*University of Georgia*

4:00 PM- 6:00 PM P280

Monitoring litter quality in cage-free facilities with W-36 pullets

Xiao Yang^{*GS}, Ramesh Bist, Sachin Subedi, Yangyang Guo, Casey Ritz, Lilong Chai *Department of Poultry Science, University of Georgia*

4:00 PM- 6:00 PM P281

Application of feed additives garlic-cinnamon combination and betaine positively influences production older layers —Colombia commercial study

Kim Wilson^{*1}, Lien Vande Maele¹, Jorge Plata², Hector Navarro¹, Diana Hernández¹, Arno van der Aa¹ ¹*Orffa Additives, B.V.*, ²*San Rafael Farm*

Environment, Management and Animal Well-Being: Stress Responses, Behavior

Moderators: Dr. Anuraj Sukumarna, MSSTATE and Dr. Sara Orlowski, UARK

Room Number: B313 Foyer

4:00 PM- 6:00 PM P282

The effect of geogrid in free-range production systems on the microbiological profile of shell eggs and the environment

Lin Walker^{*}, Kenneth Anderson *North Carolina State University*

4:00 PM- 6:00 PM P283

Effect of increased ventilation during feeding on broiler breeder physiological response

Hammed Olanrewaju^{*}, Stephanie Collier, Klinton McCafferty, Christopher Magee, Leonard Fussell, Joseph Purswell *USDA-ARS, Poultry Research Unit*

4:00 PM- 6:00 PM P284

Effect of variable light intensity lighting program on brain activity of commercial broilers

Seong Kang^{*1}, Karen Christensen², Michael Kidd Jr.¹, Sara Orlowski¹, James Clark² ¹*University of Arkansas*, ²*Tyson Foods, Inc.*

4:00 PM- 6:00 PM P285

Ileum transcriptomic analysis of broiler chickens raised in thermoneutral or heat stress condition

Ahmed Ghareeb^{*1GS}, Gustavo Schneiders², James Foutz¹, Marie Milfort¹, Alberta Fuller¹, Romdhane Rekaya³, Samuel Aggrey¹ ¹*Department of Poultry Science, University of Georgia*, ²*Merck & Co., Inc.*, ³*Department of Animal and Dairy Science, University of Georgia*

4:00 PM- 6:00 PM P286

Eimeria maxima and heat stress combined effect on ileum transcriptome profile in meat-type chickens

Ahmed Ghareeb^{*1}, Gustavo Schneiders², James Foutz¹, Marie Milfort¹, Alberta Fuller¹, Romdhane Rekaya³, Samuel Aggrey¹ ¹*Department of Poultry Science, University of Georgia*, ²*Merck & Co., Inc.*, ³*Department of Animal and Dairy Science, University of Georgia*

4:00 PM- 6:00 PM P287

Influence of chronic and acute heat stress exposure on whole blood gene expression of stress and inflammatory markers in broilers.

Jean-Rémi Teyssier^{*1GS}, Aurélie Preynat², Pierre Cozannet², Mickaël Briens², Elizabeth Greene¹, Samuel Rochell¹, Sami Dridi¹ ¹*University of Arkansas*, ²*Adisseo France S.A.S.*

4:00 PM- 6:00 PM P288

Determining the impact of stocking density on platform usage in fast-growing broilers

Cynthia Lopez^{*}, Monica Franco, Katy Tarrant *California State University, Fresno*

4:00 PM- 6:00 PM P289

A preliminary evaluation of the impact of artificial light parameters on Pekin duck activity
Gabrielle House*^{GS}, Gregory Archer, Eric Sobotik *Texas A&M University*

Metabolism and Nutrition: Amino Acids

Moderators: Dr. Anuraj Sukumarna, MSSTATE and Dr. Sara Orlowski, UARK

Room Number: B313 Foyer

4:00 PM- 6:00 PM P290

Comparative protein quality in black soldier fly larvae meal, casein, soybean, and fishmeal using classical broiler chick assay

Veronica Cheng*, Lee-Anne Huber, Anna Shoveller, Elijah Kiarie *University of Guelph*

4:00 PM- 6:00 PM P291

Effects of low crude protein diet supplemented with three functional amino acids on the growth performance and oxidative status of broilers challenged with *Eimeria* Spp.

Guanchen Liu*^{GS}, Po-Yun Teng, Yuguo Tompkins, Woo Kim *Department of Poultry Science, University of Georgia*

4:00 PM- 6:00 PM P292

Effects of methionine source and level on growth performance and intestinal health of *Eimeria*-infected chickens

Guanchen Liu*¹, Po-Yun Teng¹, Janghan Choi¹, Sudhir Yadav¹, Fengxian Wei², Woo Kim¹

¹*University of Georgia*, ²*Institute of Animal Husbandry and Veterinary Science*

4:00 PM- 6:00 PM P293

Influence of diet cereal grain and protein on broiler performance

V. Reid*^{UG}, S. Wells-Crafton, C. Maynard, G. Mullenix, S. Orlowski, M. Kidd *Center of Excellence for Poultry Science, Division of Agriculture, University of Arkansas System*

4:00 PM- 6:00 PM P294

Determination of the Cobb 500 female broiler isoleucine requirement for a 22 to 42 d finisher period and evaluation of branched-chain amino acid synergism

C. Maynard¹, G. Mullenix¹, S. Wells-Crafton¹, S. Rao², J. Lee³, M. Kidd*¹ ¹*Center of Excellence for Poultry Science, Division of Agriculture, University of Arkansas System*, ²*Cobb-Vantress, Inc.*, ³*CJ America — Bio Business*

4:00 PM- 6:00 PM P295

Dietary crude protein and *Spirulina platensis* interaction on male broiler growth performance, water consumption and processing yields

G. Mullenix¹, C. Maynard¹, S. Wells-Crafton¹, C. Maynard¹, S. Orlowski¹, W. Bottje¹, R. Brister², M. Kidd*¹ ¹*Center of Excellence for Poultry Science, Division of Agriculture, University of Arkansas System*, ²*Tyson Foods, Inc.*

4:00 PM- 6:00 PM P296

Effect of methionine supplementation on growth performance, carcass traits, cell blood count, and intestinal morphology in broiler chickens at the grower period

Zohreh Mehdipour*¹, Abolghasem Golian², Hassan Nassiri-Moghadam², Ali Javadmanesh², Chongxiao (Sean) Chen¹ ¹*North Carolina State University*, ²*Ferdowsi University of Mashhad*

4:00 PM- 6:00 PM P297

Impact of the timing and duration of increased dietary arginine on growth performance and processing characteristics of coccidiosis vaccinated broilers

Trevor Lee*¹, Jason Lee², Roshan Adhikari², Casey Owens¹, Samuel Rochell¹ ¹*Center of Excellence for Poultry Science, University of Arkansas System Division of Agriculture*, ²*CJ America, INC*

Metabolism and Nutrition: Enzymes, Feed Additives

Moderators: Dr. Anuraj Sukumarna, MSSTATE and Dr. Sara Orlowski, UARK

Room Number: B313 Foyer

4:00 PM- 6:00 PM P298

Standardized ileal digestibility of amino acids in soybean meal with inclusions of exogenous carbohydrases for growing broiler chickens

Tanner Wise*^{1GS}, Mike Blair², Olayiwola Adeola¹ ¹*Purdue University*, ²*United Animal Health*

4:00 PM- 6:00 PM P299

Improved late lay hen performance and egg quality with the dietary supplementation of Q-Biotic® 1DP

Claudia DeLeon*^{1GS}, Miloud Araba², Troy Lohrmann², Dawn Koltes¹ ¹*Iowa State University*, ²*Quality Technology International, Inc.*

4:00 PM- 6:00 PM P300

In-vitro digestive assay to understand the effect of probiotics and a prebiotic and essential oil blend on Salmonella Enteritidis

Ishab Poudel*^{1GS}, Alamanda Calvert², Pratima Adhikari¹ ¹*Mississippi State University*, ²*BioMatrix International*

4:00 PM- 6:00 PM P301

Effect of a novel non-antibiotic feed additive on intestinal health and broiler performance with a coccidiosis vaccination program and natural necrotic enteritis occurrence

Daniel De Leon*^{1GS}, Rosana Hirai¹, Austin Silva¹, Macey Randig¹, Garrett Powell¹, Omar Gutierrez², Staci Cantley², Audrey McElroy¹ ¹*Texas A&M AgriLife Research*, ²*Huvepharma Inc.*

4:00 PM- 6:00 PM P302

Effects of syngenta enogen corn on growth performance, body composition, egg production, egg quality, and skeletal development in layers 18-45 weeks

Dima White*^{GS}, Woo Kyun Kim, Milan Sharma, John Gonzalez *University of Georgia*

4:00 PM- 6:00 PM P303

Evaluate the effects of Syngenta Enogen corn on growth performance, intestinal development, body composition and skeletal development in pullets from 0 – 17wks

Dima White*, Woo Kyun Kim, Milan Sharma, John Gonzalez *University of Georgia*

4:00 PM- 6:00 PM P304

Synergistic effect of Eucalyptus globulus and Moringa olifera ethanolic extract as Eco- friendly feed additive in diet of Cobb-500

Muhammad Kiwan Akram*^{1GS}, saima naveed¹, Anjum khalique¹, muhammad Ashraf², sohail ahmad³ ¹*Department of Animal Nutrition, University of Veterinary and Animal Science*, ²*Department of Pharmacology and Toxicology, University of Veterinary and Animal Science*, ³*Department of Poultry Production, University of Veterinary and Animal Science*

4:00 PM- 6:00 PM P305

Effect of multi-strains probiotic supplementation on broilers' growth and prevention of Salmonella infection

Ting-Yu Lee*¹, Tung-Lung Kuo², Meng-Han Tsai³, Kuo-Lung Chen², Yi-Yang Lien³, Ming-Chu Cheng³, Bi Yu¹, San-Land Young¹, Fang Chi¹, Jin-Seng Lin¹ ¹*SYN BIO TECH INC.*, ²*Department of Animal Science, National Chiayi University*, ³*Department of Veterinary Medicine, National Pingtung University of Science and Technology*

4:00 PM- 6:00 PM P306

Standardized grape extract supplementation improves skin pigmentation in colored broilers

Paul Engler*¹, Carmen Zabala², Cédric Vandenbossche¹, Juan-Manuel García¹, Mohammed el Amine BENARBIA¹ ¹*Nor-Feed SAS*, ²*Aditmaq*

4:00 PM- 6:00 PM P307

Standardized grape extract supplementation potentiates antioxidant defenses in broilers

Paul Engler*, Cédric Vandenbossche, Mohammed el Amine BENARBIA *Nor-Feed SAS*

4:00 PM- 6:00 PM P308

The efficacy of essential oils in improving egg production, egg quality, and gut health of laying hens

Basheer Nusairat*¹, Grayson Walker², kamel Mahmoud¹, Mohammad Diya' Obeidat¹ ¹*Jordan University of Science and Technology*, ²*North Carolina State University*

4:00 PM- 6:00 PM P309

Effect of single and multi-strain Q-Biotic® Bacillus on performance of broiler chickens
Miguel Ruano¹, Troy Lohrmann¹, Miloud Araba*¹, Brett Lumpkins², Greg Mathis²¹ *Quality Technology International, Inc.*, ² *Southern Poultry Research, Inc.*

4:00 PM- 6:00 PM P210

Effects of a novel ZEN-degrading enzyme (ZENzyme®) on the performance of laying hens fed zearalenone-contaminated diets

Verena Starkl*¹, Bettina Behler-Woechtli Behler-Woechtli¹, Ursula Hofstetter¹, Barbara Doupovec², Markus Aleschko²¹ *Biomim Holding GmbH*, ² *Biomim Research Center*

4:00 PM- 6:00 PM P311

Effect of supplementation of a mycotoxin mitigation product on physiological and immune changes in broilers fed mycotoxin contaminated diets

Sangita Jalukar*¹, Yong Fang², Yutong Fu², Lihong Zhao², Jinglin Ma², Feifei Han²¹ *Arm and Hammer Animal and Food Production*, ² *State Key Laboratory of Animal Nutrition, College of Animal Science and Technology, China Agricultural University*

4:00 PM- 6:00 PM P312

Influence of an enzyme blend (Immuzyme) on broiler performance from 0-42 days

Matthew Jones*¹, Charles Hofacre¹, Yulin Ma², G. Zhang³, L. Deng³, L. Zhang³¹ *Southern Poultry Research Group*, ² *Hanley International, LLC*, ³ *Tianjin Biofeed Technology Co., LTD*

4:00 PM- 6:00 PM P313

Effect of an essential oil blend on growth performance of broilers under different coccidiosis control programs

Frances Yan*, Juxing Chen, Vivek Kuttappan, Deana Hancock, Mercedes Vazquez Anon *Novus International Inc.*

4:00 PM- 6:00 PM P314

Effects of dietary supplementation of medium chain fatty acids on gut health in commercial male broiler chickens

Cinta Sol*, Mónica Puyalto, Juan José Mallo *NOREL S.A.*

4:00 PM- 6:00 PM P315

Effects of dietary supplementation of medium chain fatty acids as a performance booster in commercial male broiler chickens

Cinta Sol*, Mónica Puyalto, Juan José Mallo *NOREL, SA*

4:00 PM- 6:00 PM P316

Xylanase Supplementation: Influence on growth performance and carcass characteristics of broiler chickens

Kamel Mahmoud*, Basheer Nusairat, Omar Al Qudah *Jordan University of Science and Technology*

4:00 PM- 6:00 PM P317

Effect of a mix of essential oils and short chain fatty acid supplementation on growth performances and litter quality of broilers

Quentin Pagé, Claire Le Dain, Simon Bourbouze* *MixScience*

4:00 PM- 6:00 PM P318

The effect of dietary supplementation of Allzyme® Spectrum on the performance of pullets and layers fed low nutrient diet

Tuoying Ao*, Anthony Pescatore, Marquisha Paul, Daniel Graugnard, Rebecca Delles, Michael Ford, Ronan Power *Alltech-University of Kentucky Nutritional Research Alliance*

4:00 PM- 6:00 PM P319

M52, a natural coccidiostat, improved performance, fecal oocyst shedding and intestinal lesion score of Eimeria-infected broilers

Hongyu Xue*, San Ching, LeAnn Johnston *Amlan International*

4:00 PM- 6:00 PM P320

In vitro and in vivo evaluation of A220, as an in-feed antibiotic alternative for enteric pathogen control in poultry and swine

Hongyu Xue, Dongping Wang, San Ching, Sara Johnston* *Amlan International*

4:00 PM- 6:00 PM P321

Determination of arabinoxylan content in feedstuffs and its prediction by NIRS, to better predict the nutritional value of enzymes carbohydrases

Marcio Ceccantini^{*1}, Vincent Larat², Sophie Le-Gall³, Aurelie Preynat² ¹*Adisseo France*, ²*Adisseo France SAS*, ³*INRAE, BIBS facility, PROBE infrastructure*

4:00 PM- 6:00 PM P322

Evaluation of effectiveness of feed additives to reduce *Salmonella heidelberg* colonization in broilers.

Brian Glover^{*1}, Jose Charal¹, Milan Hruby¹, Jennie Baxter², Charles Hofacre² ¹*Archer Daniels Midland Animal Nutrition*, ²*Southern Poultry Research Group, Inc.*

4:00 PM- 6:00 PM P323

Liquid acidifier via drinking water in broiler performance, a field study

Cinta Sol^{*}, Mónica Puyalto, Juan José Mallo *NOREL S.A.*

4:00 PM- 6:00 PM P324

Effects of an herbal adaptogen feed-additive on growth performance, carcass parameters, and meat quality in heat-stressed modern broilers

Elizabeth Greene, Clay Maynard, Casey Owens, Jean-François Meullenet, Sami Dridi^{*} *University of Arkansas*

4:00 PM- 6:00 PM P325

Measurement of digesta peptidoglycan depolymerization induced by muramidase using a LCMS-MS method

Jacqueline de Souza^{*1}, Mads Pedersen², Carsten Frederiksen², Estefania Calvo³, Rual Lopez-Ulibarri³, Mikkel Klausen², Diogo Rosso¹ ¹*Novozymes Latin America Ltda*, ²*Novozymes A/S*, ³*DSM Nutritional Products*

4:00 PM- 6:00 PM P326

Effect of the origin of cavacrol from different plant extract on broiler performances; a meta-analyse

Julien Labarre¹, Joana Idiart², Jean-Francois Gabarrou^{*1}, Marie-Pierre Létourneau² ¹*PHODE*, ²*Animal Science Department, Laval University*

4:00 PM- 6:00 PM P327

Effect of a proprietary plant extract-based product on body weight, weight gain, and feed conversion when broilers received a coccidiosis vaccination without or with a chemical bioshuttle program

Muhammed Shameer Abdul Rasheed^{*}, Mark LaVorgna, Kristy Dorton *Devenish Nutrition, LLC*

4:00 PM- 6:00 PM P328

Low density feed ingredient and supplemental enzymes as nutrition strategy for economic broiler production in Egypt

Nessrin Selim^{*1}, Mona Mostafa², Hemat Abdel Magied¹, Heba Habib¹, Mohamed El Menaway³ ¹*Department of Poultry Nutrition Research, APRI, ARC*, ²*Department of Poultry Breeding Research, APRI, ARC*, ³*Department of Animal Production, Faculty of Agriculture, Cairo Univ.*

Metabolism and Nutrition: General Nutrition

Moderators: Dr. Anuraj Sukumarna, MSSTATE and Dr. Sara Orłowski, UARK

Room Number: B313 Foyer

4:00 PM- 6:00 PM P329

Does essential oil delivery route affect broiler chicken's gut microbiota profile and ceca short-chain fatty acid concentration?

Samson Oladokun^{*GS}, Deborah Adewole *Department of Animal Science and Aquaculture, Dalhousie University*

4:00 PM- 6:00 PM P330

Effect of conditioning temperature and retention time on pellet durability index

Leopoldo M. Almeida^{*1GS}, Susan M. Bonilla², Joseph P. Gulizia², José I. Vargas², José R. Hernandez², Wilmer J. Pacheco² ¹*Universidade Federal do Paraná*, ²*Department of Poultry Science, Auburn University*

4:00 PM- 6:00 PM P331

New generation high protein dried distillers grain in White Leghorn laying hens diets
Josephine Foley*^{1GS}, Sheila Purdum¹, Mallorie Wilken^{2 1} *University of Nebraska - Lincoln*, ²ICM, Inc

4:00 PM- 6:00 PM P332

The effect of high and low energy and crumble quality on growth performance in broilers
Nelsa Beckman*^{1GS}, Khairy Jenkins², Allison Blomme¹, Haley Ottot¹, Kara Dunmire¹, Charles Stark¹, Chad Paulk^{1 1} *Kansas State University*, ²North Carolina A&T

4:00 PM- 6:00 PM P333

Growth performance of broilers in response to increasing concentration of multiple mycotoxins in contaminated corn

Allison Blomme*^{1GS}, Khairy Jenkins², Kara Dunmire¹, Nelsa Beckman¹, Haley Ottot¹, Charles Stark¹, Chad Paulk^{1 1} *Dept. of Grain Science and Industry, College of Agriculture, Kansas State University*, ²Dept. of Animal Sciences, College of Agriculture and Environmental Sciences, North Carolina A&T State University

4:00 PM- 6:00 PM P334

Effect of Poor-Quality Soybean Meal on Broiler Performance

Kate McGovern*^{1GS}, Audrey Duff¹, Mike Trombetta¹, Rose Whelan², Nadia Yacoubi², Kyle Teague³, Samuel Rochell³, Lisa Bielke^{1 1} *The Ohio State University*, ²Evonik Operations GmbH, ³University of Arkansas

4:00 PM- 6:00 PM P335

An assessment of feed color effects on broiler performance parameters during the starter phase

Abigail D. McConnell*^{1UG}, Joseph P. Gulizia², Emily K. Stafford¹, Melinda N. Beel¹, Rachel S. Fibus¹, Calli E. Gregory¹, Jordan P. Latham¹, Kevin M. Downs¹, Wilmer J. Pacheco^{2 1} *Middle Tennessee State University*, ²Auburn University

4:00 PM- 6:00 PM P336

Net energy concentration of soybean meal for broiler chickens using the comparative slaughter technique

Jung Yeol Sung*, Olayiwola Adeola *Purdue University*

4:00 PM- 6:00 PM P337

Effect of protein level and grain damage on carbohydrate, crude protein, amino acids, and trypsin inhibitor content of soybeans.

Maria Alfaro-Wisaquillo*¹, Gustavo Quintana-Ospina¹, Muhammad Ali¹, Edgar Oviedo-Rondon¹, Klaus Englyst², Gilson Gomes^{3 1} *North Carolina State University*, ²Englyst Carbohydrates Ltd, ³AB Vista

4:00 PM- 6:00 PM P338

Effects of mix time on coefficient of variation (mix uniformity) and broiler growth performance

Andrea Rubio*¹, Corey Wishon¹, Rachael Wood¹, J.T. Pope², Adam Fahrenholz^{1 1} *North Carolina State University*, ²House of Raeford Farms Inc

4:00 PM- 6:00 PM P339

Effect of feeding sun-dried cassava (*Manihot esculenta*) peel meal as replacement for maize on gut organs and haematological parameters of japanese quails (*Coturnix coturnix japonica*)

Rasheed Hamzat*¹, Mustapha Sabo^{1,2 1} *Department of Animal Science, University of Abuja*, ²Department of Animal Science, Federal University Dutsin-Ma,

4:00 PM- 6:00 PM P340

Effect of enzymatically treated yeast in early feeding of broiler chickens on growth performance, organ weights, intestinal histomorphology and ceca microbial metabolites

Mohsen Mohammadigheisar^{1,2}, Hagen Schutze*³, Elijah Kiarie^{1 1} *University of Guelph*, ²New-Life Mills, A division of Parrish & Heimbecker, ³AB Agri Ltd

4:00 PM- 6:00 PM P341

Substitution of soybean meal using palm kernel meal and hydrolyzed palm kernel meal supplemented with endo-1,4- β -mannanase enzyme on performance and carcass traits of broilers

Muhsin Anas*^{1,2}, Ali Agus¹, Michael Kidd^{2 1} *Faculty of Animal Science, Universitas Gadjah Mada*, ²Centre of Excellence for Poultry Science, University of Arkansas

4:00 PM- 6:00 PM P342

Trends in mycotoxin contamination in 2021 United States corn

Chasity Pender*¹, Paige Gott¹, Shelby Ramirez², Ursula Hofstetter-Schähs², Raj Murugesan²

¹DSM Nutritional Products, ²DSM Nutritional Products AG

4:00 PM- 6:00 PM P343

Full fat high oleic acid SBM in layer hen diets improved monounsaturated fatty acid profile in adipogenic tissue and in egg

Pramir Maharjan*¹, Amin Rahimi¹, Thien Vu¹, Kari Harding¹, Ramon Malheiros¹, Lisa Dean²,

Kenneth Anderson¹, Ondulla Toomer² ¹Prestage Department of Poultry Science, North Carolina

State University, ²Agricultural Research Service, United States Department of Agriculture

Metabolism and Nutrition: Vitamins and Minerals

Moderators: Dr. Anuraj Sukumarna, MSSTATE and Dr. Sara Orlowski, UARK

Room Number: B313 Foyer

4:00 PM- 6:00 PM P344

Improvement of egg shell parameters in broiler breeders fed diets supplemented with natural 1,25(OH)₂D₃-glycosides

Željko Gottstein¹, Liča Lozica¹, Danijela Horvatek Tomić¹, Josip Miljković¹, Jasna Aladrović¹,

Ana Shek Vugrovečki¹, Dalibor Bedeković², Kathrin Bühler*³ ¹Faculty of Veterinary Medicine,

University of Zagreb, ²Faculty of Agriculture, University of Zagreb, ³Herbonis Animal Health

GmbH

4:00 PM- 6:00 PM P345

Effect of corn- or wheat-based diets and different levels of non-phytate phosphorus on the quality parameters of fresh and stored eggs

Richard Adefioye*, Michael Ford, Anthony Pescatore, Harold Gillespie, Jacqueline Jacob,

Sunday Adedokun *University of Kentucky*

4:00 PM- 6:00 PM P346

Impact of aragonite as an alternative calcium source on hen egg production and egg quality

Alyssa Lyons*^{GS}, Logan Erb, Courtney Poholsky, John Boney *Pennsylvania State University*

4:00 PM- 6:00 PM P347

Effect of source and level of supplementary dietary zinc on growth performance and in vitro immune responses in broiler chickens

Mohammad Pilevar*, Oluoyinka Olukosi *Department of Poultry Science, University of Georgia*

4:00 PM- 6:00 PM P348

Effect of copper sources on performance, bone characteristics and mineral apparent retention in broilers.

Valmiro Lima Aragao Neto*, Maiana do Nascimento Rhumas, Geiza Jesus dos Santos, Tatiane

Almeida Viana Lopes, Jeronimo Goncalves de Brito, Alexandre Moraes Pinheiro *Universidade*

Federal do Reconcavo da Bahia

4:00 PM- 6:00 PM P349

Effect of coccidiosis vaccine challenge on health, growth performance and plasma vitamin absorption of broiler chickens fed optimum dietary vitamins

Hong Liu¹, Jose-Otavio Sorbara², Jose-Maria Hernandez*², Jingcheng Zhang¹ ¹DSM China

Animal Nutrition Research Center Co., Ltd., ²DSM Nutritional Products

4:00 PM- 6:00 PM P350

Performance, intestinal morphology, and oxidative status in coccidiosis-challenged broilers fed different doses of Cu and Zn from potentiated zinc and copper (I) oxide

Agathe Romeo¹, Naiana Einhardt Manzke*¹, Somayeh Pouraghaali², Mahdi Zhandi², Mojtaba

Zaghari² ¹Animine, ²University of Tehran

4:00 PM- 6:00 PM P351

Determination of the optimum standardized ileal digestible calcium to phosphorus ratio in broilers

Carrie Walk*¹, Chongxiao (Sean) Chen², Amin Rahimi², Chelsea Phillips³, Thomas Frost³, Lisa

Laparade³, Aaron Cowieson¹ ¹DSM Nutritional Products, ²North Carolina State University, ³DSM

Nutritional Products NA

4:00 PM- 6:00 PM P352

Calcium pidolate dietary supplementation, an interesting strategy in a context of strong reduction of calcium and phosphorus in broilers feeds.

Clémence MARECAILLE*¹, Julián MELO², Xavier ROULLEAU¹, Christophe ALLENO³ ¹DIETAXION, ²Universidad Nacional de Luján, Departamento de Tecnología, ³ZOOTESTS

4:00 PM- 6:00 PM P353

The Effects of Supplemental KeyShure® Copper on Tibial Dyschondroplasia in Meat Type Ducks

Zachary Lowman*¹, Curtis Novak², Jimmy Jurgielewicz³ ¹Balchem Corporation, ²Purina Animal Nutrition, ³Joe Jurgielewicz and Son LTD

4:00 PM- 6:00 PM P354

Effect of Zn Methionine-Hydroxy-Analogue Chelate supplementation on performance and carcass quality of broiler chickens.

Liris Kindlein*¹, Raquel Araujo², Fernando Magalhães², Fabio Zotesso², Thiago Lantmann¹ ¹Universidade Federal do Rio Grande do Sul, ²Novus do Brasil Com. e Imp. LTDA.

4:00 PM- 6:00 PM P355

Testing of a novel cell culture mineral antagonist model to evaluate zinc transport

Shane Morgan, Zachary Lowman, Kenneth Sanderson, Kari Estes* *Balchem Corporation*

4:00 PM- 6:00 PM P356

Using a cell culture antagonist model to evaluate zinc absorption from organic and inorganic trace minerals

Shane Morgan, Zachary Lowman, Kenneth Sanderson, Kari Estes* *Balchem Corporation*

4:00 PM- 6:00 PM P357

The effect of various levels of dacitic (rhyolitic) tuff breccia on the antioxidant system and nutrient digestibility of broiler chickens mildly challenged with *Eimeria* spp.

Po-Yun Teng¹, Janghan Choi¹, Sudhir Yadav¹, Fernanda Lima Souza Castro*², Jon Ferrel², Woo Kim¹ ¹University of Georgia, ²AZOMITE Mineral Products, Inc.

4:00 PM- 6:00 PM P358

Lower levels of supplemental organic trace minerals vs inorganic trace minerals increased antioxidant status and humoral immune response in slow growing birds

Marquisha Paul*, Rebecca Delles, Jacqueline Jacob, Michael Ford, Tuoying Ao, Anthony Pescatore, Ronan Power *Alltech-University of Kentucky Nutrition Research Alliance*

Posters (Students in Competition)

Monday, January 24

4:00 – 6:00 p.m.

Milton L. Dendy Keynote Address

B-313

Tuesday, January 25

11:00 a.m.

Dr. Bruce Stewart-Brown, Perdue Farms

Chair: Dr. Christine Vuong, U Ark

SCAD Business Meeting

B-312

Tuesday, January 25

Noon

Chair: Dr. Christine Vuong, U Ark

SPSS Business Meeting

B-314

Tuesday, January 25

Noon

Chair: Dr. Joey Bray, Stephen F. Austin University

2021 SPSS Student Awards:

Metabolism & Nutrition

Victoria Williams, MSSTATE
Susan Bonilla, Auburn
Santiago Uribe-Diaz, UPEI
Alyssa Lyons, Penn State

Environment Management

Jonathan Moon, MSSTATE
Kelly Sweeney, UGA

Processing and Products

Hudson Thames, MSSTATE

Physiology

Lauren Vaccaro, UGA

Pathology

Katherine Cupo, NCSU

Posters

Manuel Arango, UGA
Kaicie Chasteen, Auburn
Charles Herron, Auburn

Aftab Siddique, Auburn

Travel Awards

None given; virtual meeting

Alltech Manuscript Award

VE Ayers, WVU

Don R. Sloan Undergraduate Research Award Recipients

Jared Ruff, UARK
E.K. Stafford, MTNState

Undergraduate Research Competition Participants

Rachel Osborne, Auburn
Victoria Tetel, Purdue
Jared Ruff, UARK
Leah Smith, Auburn
Jorge Sandoval, Auburn
E.K. Stafford, MTNState
Nathaniel Miller, MSSTATE

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Poster Award

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Oral Presentation Award

Daniel Maekawa, UGA

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