

**2024**

**INTERNATIONAL  
POULTRY  
SCIENTIFIC  
FORUM**

**JAN. 29 - 30**



# 2024 INTERNATIONAL POULTRY SCIENTIFIC FORUM

## Concurrent Meeting of

*The Southern Poultry Science Society 45th Annual Meeting*

*The Southern Conference on Avian Diseases 65th Annual Meeting*

January 29-30, 2024

## Program Summary

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### MONDAY SESSIONS

<b>JANUARY 29</b>	<b>ROOM NUMBER</b>	<b>TIME</b>	<b>PAGE NUMBER</b>
Teaching, Pedagogy, Extension	B-311	7:30 a.m. — 9:00 a.m. Dr. Amit Morey, Auburn	1
Physiology I Broilers, Turkeys	B-311	9:00 a.m. — 10:00 a.m. Dr. Prafulla Regmi, UGA	2
Physiology II Layers, Breeders	B-311	10:15 a.m. — 1:15 p.m. Dr. Laura Ellestad, UGA	3
Processing & Products	B-311	1:15 p.m. — 4:00 p.m. Dr. Amit Morey, Auburn Dr. Dianna Bourassa, Auburn	5
Pathology I	B-312	7:45 a.m. — 10:00 a.m. Dr. Elizabeth McMillan, USDA	7
Pathology II	B-312	10:15 a.m. — Noon. Dr Silvia Carnaccini UGA	8
SCAD I	B-312	1:00 p.m. — 4:00 p.m. Dr. Tomi Obe, UARK	9
Metabolism & Nutrition I Vitamins & Minerals	B-313	7:30 a.m. — 9:45 a.m. Dr. Sergio Vieira, UFRGS	11
Metabolism & Nutrition II Amino Acids	B-313	10:00 a.m. — Noon. Dr. Pratima Adhikari, MSSTATE	13
Metabolism & Nutrition III Feed Additives	B-313	1:00 p.m. — 4:00 p.m. Dr. Mike Persia, VT	14
Metabolism & Nutrition IV Enzymes	B-314	7:15 a.m. — 10:00 a.m. Dr. Adebayo Sokale, BASF	16
Metabolism & Nutrition V General Nutrition	B314	10:15 a.m. — Noon Dr. Joe Moritz, WVU	18
Metabolism & Nutrition VI General Nutrition	B314	1:00 p.m. — 4:00 p.m. Dr. John Boney, PSU	19
Environment Management I Animal Well-being	B315	8:00 a.m. — 10:00 a.m. Dr. Ahmed Ali, Clemson	21
Environment Management II Animal Well-being	B315	10:15 a.m. — Noon Dr. Brian Fairchild, UGA	22
Environment Management III Animal Well-being	B315	1:00 p.m. — 1:45 p.m. Dr. John Linhoss, Auburn	23
Environment Management IV Environmental Impacts	B315	1:45 p.m. — 4:00 p.m. Dr. John Linhoss, Auburn	24
Posters Displayed	Foyer	1:00 p.m. — 6:00 p.m.	35
Poster Reception	Foyer	4:00 p.m. — 6:00 p.m. Dr. Nikki Shariat, UGA Dr. Colwayne Morris, Zinpro	

## TUESDAY SESSIONS

<b>JANUARY 30</b>	<b>ROOM NUMBER</b>	<b>TIME</b>	<b>PAGE NUMBER</b>
Posters Displayed	B-313 Foyer	8:00 a.m. — Noon	
Metabolism & Nutrition VII Feed Additives	B311	7:45 a.m. — 11:00 a.m. Dr. Theresia Lavergne, Natural Biologics	25
SCAD II	B312	7:00 a.m. — 11:00 a.m. Dr. Sierra Slaughterback, Boehringer Ingelheim Dr. Tak Niino, Zoetis	27
Metabolism & Nutrition VIII Feed Additives	B313	8:15 a.m. — 11:00 a.m. Dr. Eric Sobotik, Chr. Hansen	29
Metabolism & Nutrition IX Feed Additives	B314	8:00 a.m. — 10:15 a.m. Dr. Wilmer Pacheco, Auburn	31
Metabolism & Nutrition X Vitamins & Minerals	B314	10:15 a.m. — 11:00 a.m. Dr. Wilmer Pacheco, Auburn	32
Metabolism & Nutrition XI Vitamins & Minerals	B315	7:45 a.m. — 9:15 a.m. Dr. Frances Yan, Novus International	33
Environment Management V Animal Well-being	B315	9:15 a.m. — 11:00 a.m. Dr. Greg Fraley, Purdue	34
Milton L. Dendy Keynote Lecture	B313	11:00 a.m. — Noon Dr. Tomi Obe, UARK	28
SCAD Business Meeting	B312	Noon — 1:00 p.m. Dr. Tomi Obe, UARK	
SPSS Business Meeting	B314	Noon — 1:00 p.m. Dr. Jesse Grimes, NCSU	

## Officers of the SPSS 2023-2024

<b>President:</b>	Dr. Jesse Grimes, NCSU
<b>First VP</b>	Dr. Roshan Adhikari, CJ America
<b>Second VP</b>	Dr. Dianna Bourassa, Auburn
<b>Past President</b>	Dr. Curran Gehring, Tucker Milling
<b>Executive Secretary</b>	Dr. Mary Beck Poultry Science, Emerita Mississippi State University
<b>Phone:</b>	402.540.9016
<b>Email:</b>	mbeck@poultry.msstate.edu

## Officers of the SCAD 2023-2024

<b>President:</b>	Dr. Tomi Obe, UARK
<b>Directors:</b>	Dr. Alejandro Banda, MS State U Dr. Rocio Crespo, NCSU Dr. Kiril Dimitrov, TVMDL Dr. John Donahoe Dr. Olivia Faulkner, CEVA Dr. Joe Giambrone, Auburn Dr. Maricarmen Garcia, UGA Dr. Danielle Graham, UARK Dr. Rudiger Hauck, Auburn Dr. Mark Jackwood, UGA Dr. Brian Jordan, UGA Dr. Blanca Lupiani, Texas A&M U Dr. Ken Macklin, MS State U Dr. Mary Pantin-Jackwood, SEPRL, USDA/ARS Dr. Holly Sellers, UGA Dr. Christine Vuong, UARK Dr. Susan Williams, UGA
<b>Secretary / Treasurer</b>	Dr. Susan M. Williams, UGA  Department of Population Health/PDRC University of Georgia 953 College Station Road Athens, Georgia 30602-4875
<b>Phone:</b>	706.583.0523
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## **Teaching, Pedagogy, Extension**

Moderator: Dr. Amit Morey, Auburn

Room Number: B311

Monday, January 29, 2024

### **7:30 AM M1**

Sensing and informatics for non-destructive grading of hatching eggs towards next generation hatchery practices

Alin Khaliduzzaman\*, Md Wadud Ahmed, Mohammed Kamruzzaman *Department of Agricultural and Biological Engineering, University of Illinois Urbana Champaign*

### **7:45 AM M2**

Using Artificial Intelligence Enabled Technologies in Poultry Science Education and Extension

Amit Morey\* *Auburn University*

### **8:00 AM M3**

Convergence Science and Research: Building New Disciplines to Train Students and Build Future Leaders for the Poultry Industry

Amit Morey\* *Auburn University*

### **8:15 AM M4**

Determining the size and scope of USDA-exempted poultry processing in Pennsylvania

Darby Boontarue\*<sup>GS</sup>, Torey Fischer, John Boney *Pennsylvania State University*

### **8:30 AM M5**

Assessing the need and interest in implementation of an online poultry extension continuing education program

Peyton Taylor\*<sup>GS</sup>, Jessica Wells, Kelley Wamsley, Cory Bailey, Ryan Walker *Mississippi State University*

### **8:45 AM M6**

Assessing the need and interest in implementation of an online high school dual credit poultry course in the state of Mississippi

Peyton Taylor\*, Jessica Wells, Kelley Wamsley, Cory Bailey, Ryan Walker *Mississippi State University*

## **Physiology, Endocrinology & Reproduction I Broilers, Turkeys**

Moderator: Dr. Prafulla Regmi, UGA

Room Number: B311

Monday, January 29, 2024

### **9:00 AM M7**

Effect of growth rate in the physiology of somatotropic axis in a commercial broiler strain  
Nabin Neupane\*<sup>GS</sup>, Laura Ellestad, Shailes Bhattra, Prafulla Regmi *University of Georgia*

### **9:15 AM M8**

Impact of two novel Salmonella bacterin vaccines on broiler chicken immunity and performance  
Asgar Sedaghat\*<sup>1GS</sup>, Walid Ghazi Al Hakeem<sup>1</sup>, Shahna Fathima<sup>1</sup>, Syamily Shaji<sup>1</sup>, Parimal Sheth<sup>2</sup>, Ramesh Selvaraj<sup>1</sup> *1 University of Georgia, 2 Endovac Animal Health*

### **9:30 AM M9**

Evaluating impacts of bacitracin methylene disalicylate supplementation on modern and legacy broilers under heat stress.

Colin Barcelo\*<sup>GS</sup>, Laura Ellestad *University of Georgia*

### **9:45 AM M10**

Effect of light spectrum and intensity on female turkey breeder performance and egg quality  
Clara Ziezold\*<sup>GS</sup>, Gregoy Bedecarrats *Department of Animal Biosciences, University of Guelph*

### **10:00 AM Break**

## **Physiology, Endocrinology and Reproduction II Layers, Breeders**

Moderator: Dr. Laura Ellestad, UGA

Room Number: B311

Monday, January 29, 2024

### **10:15 AM M11**

Sex differences in intestinal morphology and an increase in diencephalic neuropeptide Y gene expression in Pekin ducks exposed to chronic heat stress.

Esther Oluwagbenga\*<sup>GS</sup>, Kolapo Ajuwon, Greg Fraley *Purdue University*

### **10:30 AM M12**

Impact of translucency score and trace mineral supplementation on eggshell quality parameters.

Cassidy Morris\*<sup>1GS</sup>, Jonathan Moon<sup>1</sup>, Michael Carroll<sup>1</sup>, Leticia Orellana<sup>2</sup>, Raquel Burin<sup>3</sup>, Colwayne Morris<sup>3</sup>, Austin Jasek<sup>3</sup>, Duarte Neves<sup>3</sup>, Ken Macklin<sup>1</sup> <sup>1</sup>*Mississippi State University*, <sup>2</sup>*Auburn University*, <sup>3</sup>*Zinpro Corporation*

### **10:45 AM M13**

Circadian regulation of calcium and phosphorus transport in the shell gland across the laying hen egg production cycle

Micaela Sindair-Black\*<sup>1GS</sup>, Alejandra Garcia<sup>1</sup>, Roselina Angel<sup>2</sup>, Bibiana Jaramillo<sup>3</sup>, Xabier Arbe<sup>4</sup>, David Caverio<sup>4</sup>, Laura Ellestad<sup>1</sup> <sup>1</sup>*Department of Poultry Science, University of Georgia*, <sup>2</sup>*Animal and Avian Sciences, University of Maryland*, <sup>3</sup>*Illuma Alliance*, <sup>4</sup>*H&N International*

### **11:00 AM M14**

Evaluation of supplementation with AlphaD3™ on the physiological regulation of mineral homeostasis and bone integrity in commercial laying hens.

R. Alejandra Garcia\*<sup>1GS</sup>, Micaela Sindair-Black<sup>1</sup>, Roselina Angel<sup>2</sup>, Bibiana Jaramillo<sup>3</sup>, Xabier Arbe<sup>4</sup>, David Caverio<sup>4</sup>, Nabin Neupane<sup>1</sup>, Prafulla Regmi<sup>1</sup>, Gene Rodrick<sup>5</sup>, Joseph Kindler<sup>5</sup>, Laura Ellestad<sup>1</sup> <sup>1</sup>*Department of Poultry Science, University of Georgia*, <sup>2</sup>*Animal and Avian Sciences, University of Maryland*, <sup>3</sup>*Illuma Alliance*, <sup>4</sup>*H&N International*, <sup>5</sup>*Department of Nutritional Sciences, University of Georgia*

### **11:15 AM M15**

Leukocyte profiles in blood, spleen, liver, and cecal tonsils following a multi-step commercial Salmonella vaccination program in White Leghorn chicks

Chrysta Beck\*<sup>GS</sup>, Jossie Santamaria, Ruvindu Perera, Gisela Erf *University of Arkansas System, Division of Agriculture, Center of Excellence for Poultry Science*

### **11:30 AM M16**

Local and systemic inflammatory responses to Gram- and Gram+ bacterial cell wall components in broiler lines selected for water-efficiency: insights from the dual-window approach.

Jossie Santamaria\*<sup>GS</sup>, Chrysta Beck, Sara Orlowski, Maricela Maqueda, Walter Bottje, Gisela Erf *Center of Excellence for Poultry Science, University of Arkansas System, Division of Agriculture*.

### **11:45 AM M17**

Inclusion of fish meal in broiler breeder rooster diets and the effect on semen quality, egg fertility and hatchability through peak production.

Emmillie Boot\*<sup>GS</sup>, Dimitri Malheiros, Kari Harding, Bhavisha Gulabrai, Sophie Chance, Rebecca Wysocky, Ramon Malheiros *North Carolina State University*

### **12:00 PM LUNCH**



## **Physiology, Endocrinology and Reproduction: Layers, Breeders**

Moderator: Dr. Laura Ellestad, UGA

Room Number: B311

Monday, January 29, 2024

### **1:00 PM M18**

The effect of exposure to *Micrococcus luteus* on broiler breeder fertility and egg hatchability

Sophie Chance<sup>\*GS</sup>, Ramon Malheiros, Bhavisha Gulabraj, Lin Walker, Aaron Kiess *North Carolina State University*

## Processing & Products

Moderators: Dr. Dianna Bourassa, Auburn and Dr. Amit Morey, Auburn

Room Number: B311

Monday, January 29, 2024

### 1:15 PM M19

The effect of sex, body weight, and parts weight on occurrence of muscle myopathies in broilers  
Muhammad Ali\*<sup>1GS</sup>, Catherine Fudge<sup>1</sup>, Nicolas Mejia-Abaunza<sup>1</sup>, Jinquan Wang<sup>1</sup>, Caitlin Harris<sup>2</sup>,  
Brian C. Bowker<sup>2</sup>, Chongxiao (Sean) Chen<sup>1</sup> <sup>1</sup>*Department of Poultry Science, University of Georgia*, <sup>2</sup>*USDA-Agricultural Research Service*

### 1:30 PM M20

Cold plasma and plasma-activated antimicrobials: Novel and sustainable technologies to reduce *Listeria monocytogenes* on processing surfaces.

Katherine Sierra\*<sup>GS</sup>, Luis Guzman, Laura Garner, Amit Morey *Auburn University*

### 1:45 PM M21

Assessing the Influence of Temperature Fluctuation During Transportation on Chicken Breast Meat Shelf Life through Bacterial Count and Electronic Nose.

Vianca Tashiguano\*<sup>GS</sup>, Katherine Sierra, Luis Guzmán, Jaroslav Valenta, Laura Garner, Sungeun Cho, Amit Morey *Auburn University*

### 2:00 PM M22

Detection of Visible and Invisible Fecal Contamination Through Spectral Imaging on Chicken WOGs

Micah Black\*<sup>1GS</sup>, Laura Garner<sup>1</sup>, Luis Guzman<sup>1</sup>, Katherine Sierra<sup>1</sup>, Vianca Tashiguano<sup>1</sup>, Bet Wu Alvarado<sup>1</sup>, Amit Morey<sup>1</sup>, Insuck Baek<sup>2</sup>, Kevin Chao<sup>2</sup>, Diane Chan<sup>2</sup>, Moon Kim<sup>2</sup>, Jianwei Qin<sup>2</sup>, Nicholas MacKinnon<sup>3</sup>, Stanislav Sokolov<sup>3</sup>, Fartash Vasefi<sup>3</sup> <sup>1</sup>*Auburn University*, <sup>2</sup>*USDA-ARS*, <sup>3</sup>*SafetySpect Inc.*

### 2:15 PM M23

Genomic analysis of *Campylobacter jejuni* isolated from commercial broiler processing plants.

Diksha Pokhrel\*<sup>1GS</sup>, Hudson Thames<sup>1</sup>, Mark Arick<sup>2</sup>, Chuan-Yu Hsu<sup>2</sup>, Thu Dinh<sup>3</sup>, Wes Schilling<sup>4</sup>, Shecoya White<sup>4</sup>, Reshma Ramachandran<sup>1</sup>, Anuraj Sukumaran<sup>5</sup>, Kenneth Macklin<sup>1</sup>, Li Zhang<sup>1</sup> <sup>1</sup>*Department of Poultry Science, Mississippi State University*, <sup>2</sup>*Institute for Genomics, Biocomputing, and Biotechnology, Mississippi State University*, <sup>3</sup>*Tyson Foods*, <sup>4</sup>*Department of Food Science, Nutrition, and Health Promotion, Mississippi State University*, <sup>5</sup>*Freshpet*

### 2:30 PM M24

Data collection of whole genomes for preparation of groundwork and understanding the role of phages in *Salmonella* Infantis strains

Hailey Fugate\*<sup>1GS</sup>, Yujie Zhang<sup>2</sup>, Li Zhang<sup>1</sup>, Yen-te Liao<sup>2</sup>, Vivian Wu<sup>2</sup> <sup>1</sup>*Mississippi State University*, <sup>2</sup>*USDA, Agriculture Research Service, Produce Safety and Microbiology Research Unit*

### 2:45 PM M25

Use of seeding for *Salmonella* infantis specific bacteriophage isolation from different poultry associated samples

Juan Figueroa\*<sup>1GS</sup>, Steven Kitchens<sup>1</sup>, Stuart Price<sup>1</sup>, Richard Buhr<sup>2</sup>, Dianna Bourassa<sup>1</sup> <sup>1</sup>*Auburn University*, <sup>2</sup>*US National Poultry Research Center*

### 3:00 PM M26

Evaluating the efficacy of a novel two-sided drop-through photonic decontamination system on *Salmonella* reduction

Abigail McConnell\*<sup>1GS</sup>, Montana Riggs<sup>1</sup>, Shijinaraj Manjankattil<sup>1</sup>, Sabin Poudel<sup>1</sup>, Madalyn Jennings<sup>1</sup>, Matthew Hughes<sup>1</sup>, Ian Rawson<sup>2</sup>, Richard Buhr<sup>3</sup>, Dianna Bourassa<sup>1</sup> <sup>1</sup>*Auburn University*, <sup>2</sup>*Pulse Forge Inc.*, <sup>3</sup>*US National Poultry Research Center, USDA-ARS*

### 3:15 PM M27

Evaluation of wing damage at different time points during processing

Madalyn Jennings\*<sup>GS</sup>, Montana Riggs, Abigail McConnell, Fanny Contreras, Dianna Bourassa *Auburn University*

### 3:30 PM M28

Analysis of metabolic changes in poultry during respiration of carbon dioxide

Montana Riggs\*<sup>GS</sup>, Charlene Hanlon, Bethany Baker-Cook, Madalyn Jennings, Abigail McConnell, Juan Figueroa, Matthew Hughes, Dianna Bourassa *Auburn University*

**3:45 PM M29**

Effects of sonication and bird age on egg bacteria levels and egg quality characteristics

Matthew Hughes\*<sup>1UG</sup>, Brigid McCrea<sup>2</sup>, Dianna Bourassa<sup>1</sup> <sup>1</sup>*Auburn University*, <sup>2</sup>*Alabama Cooperative Extension System*

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

## **Pathology I**

Moderator: Dr. Elizabeth McMillan, USDA

Room Number: B312

Monday, January 29, 2024

### **7:45 AM M30**

Evaluation of the pathogenicity of a fowl adenovirus (FAV) group E, 8b field isolate  
Subhan Ullah\*<sup>GS</sup>, Erich Linnemann, Kathryn McCullough, Holly Sellers *University of Georgia*

### **8:00 AM M31**

Eimeria infection induced hypothermia and modulated genes and proteins related to hypothermia in broiler chickens  
Janghan Choi\*<sup>1,2</sup>, Jihwan Lee<sup>1</sup>, Woo Kim<sup>1</sup> *1 University of Georgia, 2 US National Poultry Research Center*

### **8:15 AM M32**

Herbal Extract Blend to reduce Coccidiosis and Histomoniasis  
Greg Mathis\*<sup>1</sup>, Brett Lumpkins<sup>2</sup>, Lorraine Fuller<sup>3</sup>, Marc Campbell<sup>4</sup> *1 Southern Poultry Feed & Research, Inc, 2 Southern Poultry Feed & Research, Inc, 3 University of Georgia, 4 Infinite Health Labs*

### **8:30 AM M33**

Evaluation of an Automated Gel Application System for Delivering Commercial Coccidiosis Vaccine to Broiler Chickens  
Matthew Jones\*<sup>1</sup>, Charles Hofacre<sup>1</sup>, Brian Jordan<sup>2</sup>, A. Fuller<sup>3</sup>, Fred Hoerr<sup>4</sup>, Brian Dirks<sup>5</sup>, Eric Aicher<sup>5</sup>, Keith Staggs<sup>5</sup> *1 Southern Poultry Research Group, 2 Department of Population Health, College of Veterinary Medicine, University of Georgia, 3 Department of Poultry Science, College of Agricultural and Environmental Sciences, University of Georgia, 4 Veterinary Diagnostic Pathology, 5 United Animal Health*

### **8:45 AM M34**

Anti-coccidial effect of water-soluble extract of rosemary on broilers infected with Eimeria tenella  
Fang Peng\*<sup>UG</sup>, Zehe Song, Xi He, Haihan Zhang *Hunan Agricultural University*

### **9:00 AM M35**

Comparison of the In Vivo Effects of a Commercial Steroidal Saponin-Based Standardized Premixture and Synthetic Molecules on the Reproduction of Eimeria spp.  
Bui Hoa<sup>1,2</sup>, Mohammed el Amine BENARBIA\*<sup>1,2</sup> *1 LABCOM FEED IN TECH: Université d'Angers, 2 NOR FEED SAS*

### **9:15 AM M36**

Incidence of Enterococcus faecalis and Escherichia coli coinfection in nonviable embryonated broiler chicken eggs  
Jodi Delago\*, Mueez Ahmad, Enid McKinley, Alexandra Smith *Arm & Hammer Animal and Food Production*

### **9:30 AM M37**

A pan-genome-wide association study to decipher virulence mechanisms in avian pathogenic Escherichia coli  
Grayson Walker\*<sup>1GS</sup>, Chalise Brown<sup>1</sup>, M Suyemoto<sup>1</sup>, Heather Harbottle<sup>2</sup>, Jeff Gilbert<sup>2</sup>, Marilyn Martinez<sup>2</sup>, Steven Foley<sup>3</sup>, Jing Han<sup>3</sup>, Madison Johnson<sup>3</sup>, Luke Borst<sup>1</sup> *1 North Carolina State University College of Veterinary Medicine Department of Population Health and Pathobiology, 2 U.S. FDA Center for Veterinary Medicine Office of New Animal Drug Evaluation, 3 U.S. FDA National Center for Toxicological Research*

### **9:45 AM M38**

Capsular deletion mutants in pathogenic Enterococcus cecorum are attenuated in broiler embryo and chick challenge models of infection  
M Suyemoto\*, Grayson Walker, Luke Borst *North Carolina State University College of Veterinary Medicine Department of Population Health and Pathobiology*

### **10:00 AM Break**

## **Pathology II**

Moderator: Dr Silvia Carnaccini, UGA

Room Number: B312

Monday, January 29, 2024

### **10:15 AM M39**

Impact of Isoquinoline Alkaloids on airsacculitis scores.

Cleverson Souza\*<sup>1</sup>, Arthur Massei<sup>1</sup>, Dimitri de Freitas<sup>1</sup>, Elisangela dos Santos<sup>2</sup>, Kelvin da Silva<sup>2</sup>, Núbia Oliveira<sup>2</sup> <sup>1</sup>*Phytobiotics*, <sup>2</sup>*Pluma Agroavícola*

### **10:30 AM M40**

Investigating the pathogenesis and infective dose of *Campylobacter hepaticus* in white leghorn laying hens.

James Wilson\*<sup>GS</sup>, Roel Becerra, Catherine Logue *University of Georgia*

### **10:45 AM M41**

Combating Necrotic Enteritis: A Breakthrough with *L. reuteri* Vected Nanobodies

Arvind Kumar\*, Dharanesh Gangaiah, Amy McMillan, Desmond Adeniyi, Jacob Shields, Shekar Govindaswamy, Eric Nungester, Olaitan Akintunde, Ali Camara, Emmily Helmes, Nathan Augspurger, Simmi Manuja *BiomEdit*

### **11:00 AM M42**

The impact of *Salmonella Typhimurium* and coccidiosis vaccine on the cecal transcriptome in broiler chickens in the late stage of production

Andrea Pietruska\*<sup>1</sup>, Steven Kitchens<sup>1</sup>, Rana Tabish<sup>2</sup>, Maria Terra-Long<sup>3</sup>, Ken Macklin<sup>4</sup>, Stuart Price<sup>1</sup>, Rüdiger Hauck<sup>1,2</sup> <sup>1</sup>*Department of Pathobiology, Auburn University*, <sup>2</sup>*Department of Poultry Science, Auburn University*, <sup>3</sup>*Phileo by Lesaffre*, <sup>4</sup>*Department of Poultry Science, Mississippi State University*

### **11:15 AM M43**

Binding profiles of H5 influenza A viruses on avian and mammalian respiratory and gastrointestinal tissues

Ben Enyetornye\*<sup>GS</sup>, Sarah Carlisle, Brittany Seibert, Lindsey Gay, Carlos Caceres, Chloe Goodwin, Nicole Nemeth, Daniel Perez, Silvia Carnaccini *University of Georgia*

### **11:30 AM M44**

A delay in reticulin resolution indicates erythrocytes are stressed

Paul Cotter\* *Framingham State University*

### **11:45 AM M45**

Fowl Adenovirus: Pathogenicity, Epidemiology, and Rapid Detection of Serotype 4 using Insulated Isothermal PCR in Broiler Chickens in the United Arab Emirates.

Merghani Adam\* *ARABIAN FARMS DEVELOPMENT LLC*

### **12:00 PM LUNCH**

## SCAD I

Moderator: Dr. Tomi Obe, UARK

Room Number: B312

Monday, January 29, 2024

### 1:00 PM M46

Effect of essential oils, fatty acid and mineral blend product on a live Salmonella vaccine in a Salmonella infantis challenge model

Charles Hofacre\*<sup>1</sup>, Matthew Jones<sup>1</sup>, Jennie Baxter<sup>1</sup>, Aldo Rossi<sup>2</sup>, Jay Hughes<sup>2</sup>, Roy Berghaus<sup>3</sup>

<sup>1</sup>*Southern Poultry Research Group, Inc.*, <sup>2</sup>*Oil-Dri Corporation*, <sup>3</sup>*The University of Georgia*

### 1:15 PM M47

Understanding the pathogenesis of Campylobacter hepaticus using different types of layer hen breeds, broiler breeders, and broilers in a well-developed challenge model

Roel Becerra\*<sup>GS</sup>, Catherine M. Logue, James Wilson *University of Georgia*

### 1:30 PM M48

Exploring Focal Duodenal Necrosis: A Preliminary Study Investigating Disease Replication Through Challenge Experiments

Yu-Yang Tsai\*<sup>GS</sup>, Julia Lima, Klao Runcharoon, Catherine Lgoue *Department of Population Health, University of Georgia*

### 1:45 PM M49

Development of a mobile broiler Salmonella diagnosis system

Venkat Umesh Chnadra Bodempudi\*<sup>1GS</sup>, Guoming Li<sup>1</sup>, Samuel Aggrey<sup>1</sup>, Adelumola Oladeinde<sup>2</sup>

<sup>1</sup>*University of Georgia*, <sup>2</sup>*USDA Agricultural Research Service*

### 2:00 PM M50

Evaluation of a prebiotic mannan-oligosaccharide on Salmonella Enteritidis cecal colonization and immune response of broiler chickens

Allison Milby-Blackledge\*<sup>1GS</sup>, Yuhua Farnell<sup>1</sup>, Audrey McElroy<sup>1</sup>, Christi Swaggerty<sup>2</sup>, Leticia Pachaeco<sup>3</sup>, Robson Barducci<sup>3</sup>, Anderson Santos<sup>3</sup>, Joao Koch<sup>3</sup>, Thaila Putarov<sup>3</sup>, Morgan Farnell<sup>1</sup>

<sup>1</sup>*Department of Poultry Science, Texas A&M AgriLife Research*, <sup>2</sup>*United States Department of Agriculture, Southern Plains Research Center*, <sup>3</sup>*Biorigin Brazil*

### 2:15 PM M51

Effect of dietary ginger root extract (GRE) on intestinal Salmonella colonization in broiler chicks.

Ikenna Eneya\*<sup>GS</sup>, Paul Omaliko, Tunde Ogundare, Odinaka Iwuozo, Oluteru Orimaye, Oluwabunmi Apalowo, Yewande Fasina *North Carolina Agricultural and Technical State University*

### 2:30 PM M52

Assessment of the effects of feed sanitizer Finio® on the horizontal transmission of Salmonella Infantis, performance, and carcass yield in broiler chickens for a period of 35 days

Juan Latorre\*<sup>1</sup>, Raul Rosalino-Marcon<sup>1</sup>, Roberto Señas-Cuesta<sup>1</sup>, Makenly Coles<sup>1</sup>, Guillermo Tellez-Isaias<sup>1</sup>, Billy Hargis<sup>1</sup>, Callie Selby<sup>2</sup>, Enrique Montiel<sup>2</sup> <sup>1</sup>*University of Arkansas*, <sup>2</sup>*Anitox Corporation*

### 2:45 PM M53

Characterizing pathogenicity traits of emerging serogroups of Avian Pathogenic E. coli (APEC) using in vitro and in vivo assays

Klao Runcharoon\*<sup>GS</sup>, Julia Lima, Yu Yang Tsai, Catherine Logue *Department of Population Health, College of Veterinary Medicine, University of Georgia*

### 3:00 PM M54

Genomic insights into Type VI Secretion System in Avian Pathogenic Escherichia coli

Julia Ienes-Lima\*<sup>GS</sup>, Klao Runcharoon, Cierra Dunham, Catherine Logue *University of Georgia*

### 3:15 PM M55

Updates on current understanding of penguin-stance myotendinopathy in broiler breeder males

Jason Sousa\*<sup>1GS</sup>, Robin Gilbert<sup>2</sup>, Jenny Nicholds<sup>1</sup>, Fred Hoerr<sup>3</sup> <sup>1</sup>*Poultry Diagnostic and Research Center, University of Georgia*, <sup>2</sup>*Wayne-Sanderson Farms*, <sup>3</sup>*Veterinary Diagnostic Pathology*

### **3:30 PM M56**

Meta-analysis of the normal chicken cecal microbiota

Matheus Santini<sup>\*1,2UG</sup>, Andrea Pietruska<sup>3</sup>, Zubair Khalid<sup>3</sup>, Ruediger Hauck<sup>1,3</sup> <sup>1</sup>*Department of Poultry Science, Auburn University, Auburn, AL 36849*, <sup>2</sup>*Faculty of Veterinary, Universidade Federal de Minas Gerais (UFMG), Belo Horizonte, Brazil*, <sup>3</sup>*Department of Pathobiology, Auburn University, Auburn, AL 36849*

### **3:45 PM M57**

MinION amplicon sequencing rapidly and accurately resolves mixed ARV populations in diagnostic samples

Olatunde Oluwayinka<sup>\*1GS</sup>, Erich Linnemann<sup>1</sup>, Kelsey Young<sup>2</sup>, James Stanton<sup>2</sup>, Holly Sellers<sup>1</sup>  
<sup>1</sup>*Department of Population Health, University of Georgia*, <sup>2</sup>*Department of Pathology, University of Georgia*

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

## Metabolism and Nutrition | Vitamins & Minerals

Moderator: Dr. Sergio Vieira, UGRFS

Room Number: B313

Monday, January 29, 2024

### 7:30 AM M58

Effect of organic Zn sources on performance, tibia parameters and gut permeability of broiler chickens to an Eimeria challenges

Mohammad Pilevar\*, Oluyinka Olukosi *Department of Poultry Science, University of Georgia*

### 7:45 AM M59

Performance and tibia mineralization response of YPM x Ross 708 male broilers subjected to a necrotic enteritis challenge and fed diets containing varying limestone particle sizes and calcium concentrations from 1 to 35 days of age

Joseph P. Gulizia\*<sup>1GS</sup>, Rana W. Tabish<sup>1</sup>, Jose I. Vargas<sup>1</sup>, Jose R. Hernandez<sup>1</sup>, Cristina T. Simões<sup>1</sup>, Eva G. Guzman<sup>1</sup>, Samuel J. Rochell<sup>1</sup>, Ruediger Hauck<sup>1,2</sup>, Matthew A. Bailey<sup>1</sup>, William A. Dozier, III<sup>1</sup>, Klint W. McCafferty<sup>3</sup>, Wilmer J. Pacheco<sup>1</sup> <sup>1</sup>*Department of Poultry Science, Auburn University*, <sup>2</sup>*Department of Pathobiology, Auburn University*, <sup>3</sup>*USDA-ARS Poultry Research Unit, Mississippi State*

### 8:00 AM M60

Influence of different calcium levels and limestone partide sizes on the intestinal microbiome in broilers upon subclinical necrotic enteritis challenge

Rana Waqar Tabish\*<sup>1GS</sup>, Joseph Gulizia<sup>1</sup>, Jose Vargas<sup>1</sup>, Jose Hernandez<sup>1</sup>, Cristina Simões<sup>2</sup>, Eva Guzman<sup>1</sup>, Wilmer Pacheco<sup>1</sup>, Samuel Rochell<sup>1</sup>, Matthew Bailey<sup>1</sup>, William Dozier<sup>1</sup>, Klint McCafferty<sup>3</sup>, Ruediger Hauck<sup>1,4</sup> <sup>1</sup>*Department of Poultry Science, Auburn University*, <sup>2</sup>*Federal University of Santa Maria*, <sup>3</sup>*USDA-ARS Poultry Research Unit*, <sup>4</sup>*Department of Pathobiology, Auburn University*

### 8:15 AM M61

The use of PolyTransport technology to reduce the bioavailability of iron to enteric pathogens

Jessica Brown\*<sup>1GS</sup>, Ashley Tarcin<sup>1</sup>, Rachel Ganske<sup>1</sup>, Joshua Jendza<sup>2</sup>, Eric Neeno-Eckwall<sup>3</sup>, Jessica Hite<sup>3</sup>, Steven Ricke<sup>1</sup> <sup>1</sup>*Meat Science and Animal Biologics Discovery, Department of Animal and Dairy Sciences, University of Wisconsin-Madison*, <sup>2</sup>*Qualitech Inc.*, <sup>3</sup>*School of Veterinary Medicine, Department of Pathobiological Sciences, University of Wisconsin-Madison*

### 8:30 AM M62

Starter diet non-phytate phosphorus concentration and research facility do not influence regression-derived ileal phosphorus digestibility of soybean meal for broiler chickens

Vitor Santos Haeringer\*<sup>1GS</sup>, Jung Sung<sup>1</sup>, Sunday Adedokun<sup>2</sup>, William Dozier<sup>3</sup>, Carl Parsons<sup>4</sup>, Markus Rodehutschord<sup>5</sup>, Olayiwola Adeola<sup>1</sup> <sup>1</sup>*Purdue University*, <sup>2</sup>*University of Kentucky*, <sup>3</sup>*Auburn University*, <sup>4</sup>*University of Illinois at Urbana-Champaign*, <sup>5</sup>*University of Hohenheim*

### 8:45 AM M63

Standardized ileal digestibility of calcium and phosphorus in inorganic sources for broilers

Chae Won Lee\*<sup>GS</sup>, Su Hyun An, June Hyeok Yoon, Inho Cho, Yun Ji Jeon, Changsu Kong *Kyungpook National University*

### 9:00 AM M64

Availability of iron from comercial limestone and dicalcium phosphate for broilers

Julmar Feijo\*<sup>1GS</sup>, Sergio Vieira<sup>1</sup>, Douglas Maria<sup>1</sup>, Raquel Horn<sup>1</sup>, Walter Altevogt<sup>1</sup>, Samantha Silveira<sup>1</sup>, Brenda Nicola<sup>1</sup>, André Favero<sup>2</sup> <sup>1</sup>*Universidade Federal do Rio Grande do Sul*, <sup>2</sup>*Santa Livia Farm*

### 9:15 AM M65

The effects of a natural source of vitamin D (Trisetum flavences) on broiler breeder production and offspring performance

Raquel Horn\*<sup>1GS</sup>, Sergio Vieira<sup>1</sup>, Dimitri Freitas<sup>2</sup>, Douglas Maria<sup>1</sup>, Julmar Feijó<sup>1</sup>, Walter Altevogt<sup>1</sup>, Samantha Silveira<sup>1</sup>, Brenda Nicola<sup>1</sup>, André Favero<sup>3</sup> <sup>1</sup>*Universidade Federal do Rio Grande do Sul*, <sup>2</sup>*Phytobiotics Brazil*, <sup>3</sup>*Santa Livia Farm*

### 9:30 AM M66

Evaluation of aragonite as a calcium source in laying hen diets

Alyssa Lyons\*<sup>1GS</sup>, Steve Dowd<sup>2</sup>, Jon Hart<sup>2</sup>, M Persia<sup>1</sup> <sup>1</sup>*Virginia Tech*, <sup>2</sup>*Ag Source LLC*

### 9:45 AM Break



## Metabolism and Nutrition II Amino Acids

Moderator: Dr. Pratima Adhikari, MSSTATE

Room Number: B313

Monday, January 29, 2024

### 10:00 AM M67

Assessing Ross 708 broiler responses to practical adjustments of dietary valine and isoleucine in diets moderately increased in leucine

Benjamin Angel<sup>\*1GS</sup>, Kenneth Nelson<sup>1</sup>, Savannah Wells-Crafton<sup>1</sup>, Matheus Costa<sup>1</sup>, Mitchell Vaught<sup>1</sup>, Chance Williams<sup>2</sup>, Jason Lee<sup>3</sup>, Michael Kidd<sup>1</sup> <sup>1</sup>University of Arkansas, <sup>2</sup>Wayne-Sanderson, <sup>3</sup>CJ America-Bio

### 10:15 AM M68

Dietary arginine responses of Ross 708 broilers reared under cyclic elevated temperatures.

Annalise Anderson<sup>\*1GS</sup>, Jason Lee<sup>2</sup>, Roshan Adhikari<sup>2</sup>, Samuel Rochell<sup>1</sup> <sup>1</sup>Department of Poultry Science, Auburn University, <sup>2</sup>CJ America, Inc.

### 10:30 AM M69

Influence on the hypothalamic expression of feed intake control genes and jejunal morphology in broiler chickens receiving increasing levels of digestible lysine and branched-chain amino acids.

Adeleye Ajao<sup>\*GS</sup>, Oluoyinka Olukosi *University of Georgia*

### 10:45 AM M70

Effects of the different ratios of branched chain amino acids (BCAAs) on growth performance, meat quality, and intestinal health in broilers fed with low and high crude protein diet.

Doyun Goo<sup>\*1GS</sup>, Amit Singh<sup>1</sup>, Janghan Choi<sup>2</sup>, Milan Sharma<sup>1</sup>, Deependra Paneru<sup>1</sup>, Jihwan Lee<sup>1</sup>, Woo Kim<sup>1</sup> <sup>1</sup>Department of Poultry Science, University of Georgia, <sup>2</sup>United States National Poultry Research Center, USDA-ARS

### 11:00 AM M71

Effects of varying branched-chain amino acid ratio using corn gluten meal, L-isoleucine, and L-valine on 0-21d turkey poult performance.

Emily Estanich<sup>\*1GS</sup>, Kristina Bowen<sup>1</sup>, Lucas Knarr<sup>1</sup>, Elizabeth Lynch<sup>1</sup>, Sally Noll<sup>2</sup>, Arturo Garcia Morales<sup>3</sup>, Joseph Moritz<sup>1</sup> <sup>1</sup>West Virginia University, <sup>2</sup>University of Minnesota, <sup>3</sup>Butterball, LLC

### 11:15 AM M72

Understanding the branched-chain amino acid interactions in Hy-Line W-36 layer pullets during 6-12 weeks of age

Charis Waters<sup>\*1GS</sup>, Roshan Adhikari<sup>2</sup>, Jason Lee<sup>2</sup>, Ruben Kriseldi<sup>3</sup>, Michael Elliot<sup>4</sup>, Kelley Wamsley<sup>1</sup>, Pratima Adhikari<sup>1</sup> <sup>1</sup>Mississippi State University, <sup>2</sup>CJ Bio America, <sup>3</sup>Aviagen, <sup>4</sup>A&E Nutrition Services, LLC

### 11:30 AM M73

Precision nutrition: The value of considering the energy, amino acid content, and digestibility values of soybean meals in feed formulation.

Thiago H. Yabuta, Edgar Oviedo-Rondón\* *Prestage Department of Poultry Science, North Carolina State University*

### 11:45 AM M74

Evaluation of 24 commercial lots of soybean meal of different origins indicates that both KOH protein solubility and trypsin inhibitor analyses are needed to determine soybean meal quality

Nelson Ruiz<sup>\*1</sup>, Carl Parsons<sup>2</sup>, Benjamin Parsons<sup>3</sup>, Keshun Liu<sup>4</sup> <sup>1</sup>Nelson Ruiz Nutrition, LLC, <sup>2</sup>Department of Animal Sciences, University of Illinois, <sup>3</sup>Department of Poultry Science, University of Arkansas, <sup>4</sup>Grain Chemistry and Utilization Laboratory, National Small Grains and Potato Germplasm Research Unit, USDA

### 12:00 PM LUNCH

## Metabolism and Nutrition III Feed Additives

Moderator: Dr. Mike Persia, VT

Room Number: B313

Monday, January 29, 2024

### 1:00 PM M75

Dietary oleuropein supplementation affects lipolysis in broilers.

Usman Sulaiman\*<sup>1GS</sup>, Reagan Vaughan<sup>1</sup>, Paul Siegel<sup>1</sup>, Dongmin Liu<sup>2</sup>, Elizabeth Gilbert<sup>1</sup>, Mark Cline<sup>3</sup> <sup>1</sup>*School of Animal Sciences, Virginia Polytechnic Institute and State University*, <sup>2</sup>*Department of Human Nutrition, Foods and Exercise, Virginia Polytechnic Institute and State University*, <sup>3</sup>*School of Neuroscience, Virginia Polytechnic Institute and State University*

### 1:15 PM M76

Role of Solergy as an alternative energy source in low and high-fat diets fed to broilers

Catherine Fudge\*<sup>1GS</sup>, Octavi Colom<sup>2</sup>, Ekaitz Maguregui<sup>2</sup>, Housseem Kadardar<sup>2</sup>, Chongxiao Chen<sup>1</sup> <sup>1</sup>*University of Georgia*, <sup>2</sup>*Igusol Advance S.A.*

### 1:30 PM M77

Effect of low protein soybean meal with soy hull or wheat-bran inclusion to corn-based diets on ileal digestibility, jejunum histomorphology, and expression of nutrient transporters under mild coccidiosis

Shravani Veluri\*<sup>GS</sup>, Oluoyinka Olukosi *Department of Poultry Science, University of Georgia*

### 1:45 PM M78

Evaluating the effects of a dietary monoglyceride supplement on intestinal integrity and host defenses during a broiler coccidiosis infection

Laney Froebel\*<sup>1GS</sup>, Julianna Jespersen<sup>1</sup>, Kaitlyn Sommer<sup>1</sup>, Cameron White<sup>1</sup>, Adriana Barri<sup>2</sup>, Adebayo Sokale<sup>2</sup>, Ryan Dilger<sup>1</sup> <sup>1</sup>*University of Illinois*, <sup>2</sup>*BASF SE*

### 2:00 PM M79

Evaluating the effect of bacitracin methylene disalicylate on cecal microbiota of broilers during a subclinical necrotic enteritis condition

Shailes Bhattarai\*<sup>1GS</sup>, Monika Proszkowiec-Weglarz<sup>2</sup>, Laura Ellestad<sup>1</sup> <sup>1</sup>*University of Georgia*, <sup>2</sup>*United States Department of Agriculture, Agriculture Research Service, Animal Biosciences and Biotechnology Laboratory*

### 2:15 PM M80

Effect of dietary postbiotics supplementation on growth performance and immune response in broilers challenged with necrotic enteritis

Hanseon Ko\*<sup>GS</sup>, Doyun Goo, Jihwan Lee, Woo Kyun Kim *University of Georgia*

### 2:30 PM M81

Probiotein® effect on metabolite dysregulation of 14-day poultry cecal contents.

Elena Olson\*<sup>1GS</sup>, Alysson Freedman<sup>1</sup>, Lindsey Wythe<sup>2</sup>, Chamia Chatman<sup>1</sup>, Erica Majumder<sup>1</sup>, Abe Sheaffer<sup>3</sup>, Steven Ricke<sup>1</sup> <sup>1</sup>*University of Wisconsin-Madison*, <sup>2</sup>*Texas A&M University*, <sup>3</sup>*SweetPro*

### 2:45 PM M82

Supplementation of novel probiotics improves layer performance and modulates cecal microbial populations

Ragini Reddyvari\*<sup>GS</sup>, Venkata Praveen Raja Kosuri, Sulthana Humayoon Muttathukonam, Yuying Ren, Eswari Kanike, Maiuri Gao, Mary Anne Amalaradjou *University of Connecticut*

### 3:00 PM M83

Effects of enteric released or pure benzoic acid on Ross 708 male broilers raised on used pine shaving litter

Cooper Fritzlen\*<sup>1GS</sup>, Zhigang Tan<sup>2</sup>, Wenzhen Chen<sup>2</sup>, Haijun Liu<sup>2</sup>, Xianfeng Peng<sup>2</sup>, Zonghua Qin<sup>2</sup>, Michael Persia<sup>1</sup> <sup>1</sup>*Virginia Tech*, <sup>2</sup>*Guangzhou Insighter Biotechnology Co., Ltd*

### 3:15 PM M84

Effects of saponin blend on the performance and oocyst shedding of young laying hens exposed to coccidial vaccine challenge and residual manure access.

Delaney Groves\*<sup>1UG</sup>, Emily Kimminau<sup>2</sup>, T Karnezos<sup>2</sup>, M Persia<sup>1</sup> <sup>1</sup>*Virginia Tech*, <sup>2</sup>*Land O' Lakes*

### 3:30 PM M85

The effects of Magni-Phi on the performance response of commercial white layers during pullet rearing and through a single laying cycle

Dimitri Malheiros\*<sup>GS</sup>, Kenneth Anderson *North Carolina State University*

**3:45 PM M86**

Evaluating the efficacy of humic acids in alleviating aflatoxin B1 toxicity in turkey poults  
Jesus Maguey-Gonzalez\*<sup>1</sup>, Maria de Jesus Nava<sup>2</sup>, Juan Latorre<sup>1</sup>, Ileana Loeza<sup>1</sup>, Roberto Senas<sup>1</sup>, Sergio Gomez<sup>3</sup>, Abraham Albores<sup>2</sup>, Xiangwei Du<sup>4</sup>, Guillermo Tellez<sup>1</sup>, Billy Hargis<sup>1</sup>  
<sup>1</sup>*Department of Poultry Science, University of Arkansas*, <sup>2</sup>*UIM, L5: LEDEFAR, FES-C, UNAM*,  
<sup>3</sup>*CENID-INIFAP*, <sup>4</sup>*Veterinary Diagnostic Laboratory, Iowa State University*

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

## Metabolism and Nutrition IV Enzymes

Moderator: Dr. Adebayo Sokale, BASF

Room Number: B314

Monday, January 29, 2024

### 7:15 AM M87

Effect of dietary supplementation of a multi-carbohydrase enzyme complex to broiler diets with or without energy reduction on performance, carcass traits and intestinal morphology

Carlos Soto\*<sup>1</sup>, Hector Leyva<sup>1</sup>, Brian Dirks<sup>1</sup>, Absaar Mahmood<sup>2</sup>, Ehsaan Khan<sup>2</sup>, Asif Rana<sup>3</sup>, Nadim Amarin<sup>1</sup> <sup>1</sup>United Animal Health, <sup>2</sup>University of Veterinary and Animal Sciences, <sup>3</sup>Hivet Animal Health Business

### 7:30 AM M88

Validation of the inclusion rate of a  $\beta$ -xylanase and  $\beta$ -glucanase enzyme preparation (Natugrain<sup>®</sup> TS) in corn-soy diets for broiler chickens.

A. Sokale\*<sup>1</sup>, G. Pasquali<sup>2</sup>, A. Amerah<sup>3</sup> <sup>1</sup>BASF Corporation, <sup>2</sup>BASF SE, <sup>3</sup>Cargill Animal Nutrition

### 7:45 AM M89

Effects of high dose of phytase with a  $\beta$ -xylanase and  $\beta$ -glucanase enzyme on plasma myo-inositol and growth performance of broiler chickens.

A. Sokale\*<sup>1</sup>, A. House<sup>2</sup>, D. Wicker<sup>2</sup>, C. Middlebrooks<sup>2</sup>, D. Goltz<sup>1</sup>, K. Riley<sup>3</sup>, N. Tillman<sup>4</sup> <sup>1</sup>BASF Corporation, <sup>2</sup>Fieldale Farms Corporation, <sup>3</sup>Cargill Animal Nutrition, <sup>4</sup>Nutritional Statistics LLC

### 8:00 AM M90

Equivalence of metabolic energy release of a mannanase with and without the addition of xylanase and glucanase in broilers fed a corn-soy diet

Rodrigo Messias\*<sup>1</sup>, Rita Vieira<sup>2</sup>, Anna Fickler<sup>3</sup>, Michele Bernadino<sup>2</sup>, Rosana Maia<sup>1</sup>, Edney da Silva<sup>2</sup> <sup>1</sup>Basf SA, <sup>2</sup>Unesp, <sup>3</sup>BASF SE

### 8:15 AM M91

Impact of a multi-activity non-starch polysaccharide degrading enzyme on the performance, nutrient digestibility and nitrogen utilisation of broilers

Leni Kuterna\*<sup>1</sup>, Sebastian Kaczmarek<sup>2</sup>, Joan Edwards<sup>1</sup> <sup>1</sup>Palital Feed Additives B.V., <sup>2</sup>Poznan University of Life Sciences

### 8:30 AM M92

Efficacy of xylanase supplementation in lower energy laying hens diet

Lucio Araujo\*<sup>1</sup>, Rasha Qudsieh<sup>2</sup>, Sudhir Yadav<sup>2</sup>, Sandra Rodrigues<sup>2</sup>, Yun-mei Lin<sup>2</sup>, Douglas Faria<sup>1</sup>, Giovana Longhini<sup>1</sup>, Mario Lopes<sup>1</sup>, Cristiane Araujo<sup>1,3</sup> <sup>1</sup>University of Sao Paulo - Faculty of Animal Science and Food Engineering, <sup>2</sup>BioResource International, <sup>3</sup>University of Sao Paulo, School of Veterinary Medicine and Animal Science

### 8:45 AM M93

Effects of superdoses of phytase on peaking Hy-Line W-36 laying hen egg production and egg quality

Sophia Bianchi\*<sup>1GS</sup>, Brooke Bodle<sup>2</sup>, Courtney Poholsky<sup>1</sup>, Darby Boontarue<sup>1</sup>, John Boney<sup>1</sup> <sup>1</sup>Pennsylvania State University, <sup>2</sup>DSM Nutritional Products

### 9:00 AM M94

Evaluation of almond hulls as an alternate feed ingredient on performance, egg quality and digestibility in Lohmann LSL-Lite layer hens

Nelly Cribillero\*<sup>1GS</sup>, Craig Wyatt<sup>2</sup>, Kelley Wamsley<sup>1</sup>, Timothy Boltz<sup>1</sup>, Li Zhang<sup>1</sup>, Klint McCafferty<sup>3</sup>, Pratima Adhikari<sup>1</sup> <sup>1</sup>Poultry Science Department, Mississippi State University, <sup>2</sup>AB Vista Feed Ingredients, <sup>3</sup>USDA-ARS-Poultry Research Unit

### 9:15 AM M95

Litter consumption does not have an effect on the phytase response of Hubbard  $\times$  Ross 708 broilers reared in floor pens

Kristina Bowen\*<sup>1GS</sup>, Lucas Knarr<sup>1</sup>, Mark Jackson<sup>2</sup>, Joseph Moritz<sup>1</sup> <sup>1</sup>West Virginia University, <sup>2</sup>Huvepharma

### 9:30 AM M96

Response of broilers to varying carbohydrase supplementation within reduced nutrient corn and soybean meal-based diets on 0 to 41 d performance and processing

Emily Myers\*<sup>1GS</sup>, Shelby Corray<sup>2</sup>, Kelley Wamsley<sup>1</sup> <sup>1</sup>Mississippi State University, <sup>2</sup>DSM Nutritional Products

**9:45 AM M97**

Effect of a multi-activity non-starch polysaccharide degrading enzyme on nitrogen balance and growth performance in broilers: a meta-analysis of trial data.

Alexia Godbout\*<sup>1</sup>, Joan Edwards<sup>2</sup>, Leni Kuterna<sup>2</sup>, Marie-Pierre Létourneau-Montminy<sup>1</sup> <sup>1</sup>*Laval University*, <sup>2</sup>*Palital Feed Additives*

**10:00 AM Break**

## **Metabolism & Nutrition V General Nutrition**

Moderator: Dr. Joe Moritz, WVU

Room Number: B314

Monday, January 29, 2024

### **10:15 AM M98**

A horizontal mixer and a batch-to-horizontal mixer system increased the mix uniformity of free methionine in complete diets relative to a vertical mixer

Lucas Knarr\*<sup>GS</sup>, Kristina Bowen, Emily Estanich, Joseph Moritz *West Virginia University*

### **10:30 AM M99**

Effects of grinding different sorghum grain varieties with a hammermill on subsequent particle size and flowability

Walter Friesen\*<sup>GS</sup>, Haley Otott, Charles Stark, Chad Paulk *Kansas State University*

### **10:45 AM M100**

Feed bin fill level impacts on-farm feed particle and nutrient distribution and subsequent broiler performance over time

Courtney Poholsky\*<sup>GS</sup>, John Boney *The Pennsylvania State University*

### **11:00 AM M101**

Stochastic feed formulation: examining the cost of uncertainty in soybean nutrient composition.

Caleb Marshall\*<sup>1GS</sup>, Thiago Yabuta<sup>1</sup>, Manoel Garcia Neto<sup>2</sup>, Edgar Oviedo-Rondon<sup>1</sup> <sup>1</sup>*Prestage Department of Poultry Science, North Carolina State University*, <sup>2</sup>*Faculdade de Medicina Veterinária, Universidade Estadual Paulista*

### **11:15 AM M102**

Precision Nutrition: The value of soybean meals by origin in poultry and swine feed formulation.

Thiago Yabuta\*<sup>UG</sup>, Joaquín Cabanas-Ojeda, Edgar Oviedo-Rondón *Prestage Department of Poultry Science, North Carolina State University*

### **11:30 AM M103**

Determination of nitrogen corrected true metabolizable energy values of poultry feed ingredients by near infrared reflectance spectroscopy

Reed Dillard\*<sup>GS</sup>, Adam Davis *University of Georgia*

### **11:45 AM M104**

Utilization of near-infrared reflectance spectroscopy to predict the digestible lysine, methionine, threonine and nitrogen-corrected true metabolize energy content of mechanically and solvent-extracted soybean meals

Thomas Jones\*<sup>GS</sup>, Reed Dillard, Coleman Hatmaker, Chongxiao Chen, Adam Davis *University of Georgia*

### **12:00 PM LUNCH**

## **Metabolism & Nutrition VI General Nutrition**

Moderator: Dr. John Boney, PSU

Room Number: B314

Monday, January 29, 2024

### **1:00 PM M105**

Comparison of ingredient markers and near-infrared spectroscopy (NIRS) to assess mix uniformity

Courtney Poholsky<sup>\*1</sup>, Sophia Bianchi<sup>1</sup>, Darby Boontarue<sup>1</sup>, Caitlin Rvans<sup>2</sup>, Craig Wyatt<sup>2</sup>, John Boney<sup>1</sup> <sup>1</sup>*Penn State University*, <sup>2</sup>*AB Vista*

### **1:15 PM M106**

Effect of dietary inclusion of corn samples sourced from different origin on broiler performance, processing yield, and nutrient digestibility from 1 to 35 days of age

Jose Vargas<sup>\*GS</sup>, Joseph Gulizia, Jose Hernandez, Eva Guzman, Cristina Simoes, Leticia Orellana, Wilmer Pacheco *Department of Poultry Science, Auburn University*

### **1:30 PM M107**

Impact of low-quality soybean meal and live coccidiosis vaccination on performance, relative organ weights, and heterophil:lymphocyte ratio in broiler chickens

Makenly Coles<sup>\*1GS</sup>, Aaron Forga<sup>1</sup>, Kyle Teague<sup>1</sup>, Ross Wolfenden<sup>2</sup>, Jundi Liu<sup>2</sup>, Juan Latorre<sup>1</sup>, Guillermo Tellez-Isaias<sup>1</sup>, Billy Hargis<sup>1</sup>, B. Graham<sup>1</sup> <sup>1</sup>*University of Arkansas*, <sup>2</sup>*Animal Nutrition BU, Eastman Chemical Company*

### **1:45 PM M108**

Effect of Sub-Clinical Mycotoxin Exposure on Growth Performance and Immune Response in Eimeria-Challenged Pullets

Deependra Paneru<sup>\*1GS</sup>, Milan Sharma<sup>1</sup>, Hanyi Shi<sup>1</sup>, Hamidreza Naeini<sup>1</sup>, Venkata Reddy Choppa<sup>1</sup>, Doyun Goo<sup>1</sup>, Revathi Shanmugasundaram<sup>2</sup>, Woo Kim<sup>1</sup> <sup>1</sup>*Department of Poultry Science, University of Georgia*, <sup>2</sup>*Toxicology and Mycotoxin Research Unit, USDA-ARS*

### **2:00 PM M109**

Effect of metabolizable energy levels and feed form on broiler performance and feed wastage from 1 to 21 days of age

Jose Hernandez<sup>\*GS</sup>, Joseph Gulizia, Jose Vargas, Eva Guzman, Isadora Pegoraro, Beatriz Onishi, Wilmer Pacheco *Department of Poultry Science, Auburn University*

### **2:15 PM M110**

Influence of energy and stocking density on body composition & egg production in broiler breeders

Cole Umberson Umberson<sup>\*GS</sup>, Diego Martinez, Pramir Maharjan, Nawin Suesuttajit, Jordan Weil, Craig Coon *University of Arkansas*

### **2:30 PM M111**

A 51-week egg production assessment of White Leghorn hens fed on diets having a 400 kcal ME/kg range

Douglas Maria<sup>\*1GS</sup>, Sergio Vieira<sup>1</sup>, Raquel Horn<sup>1</sup>, Walter Altevogt<sup>1</sup>, Julmar Feijó<sup>1</sup>, Samantha Silveira<sup>1</sup>, Brenda Nicola<sup>1</sup>, Raíssa Menezes<sup>1</sup>, André Favero<sup>2</sup> <sup>1</sup>*Universidade Federal do Rio Grande do Sul*, <sup>2</sup>*Santa Livia Farm*

### **2:45 PM M112**

Determining optimum dietary balanced protein levels in white and brown egg-type pullets: outcomes on body weight, feed intake, and sexual maturation.

Jo Ann Chew<sup>\*1GS</sup>, Laura Star<sup>2</sup>, Martin Zuidhof<sup>1</sup> <sup>1</sup>*Department of Agricultural, Food and Nutritional Science, University of Alberta*, <sup>2</sup>*Schothorst Feed Research*

### **3:00 PM M113**

Effect of temperature on chicken egg quality available at grocery stores

Usman Bin Saud<sup>\*1</sup>, Muhammad Zeeshan Alam Khan<sup>2</sup>, Usman Elahi<sup>3</sup>, Nadir Shaban<sup>1</sup>, Sara Malik<sup>1</sup>, Naseem Saud Ahmad<sup>2</sup> <sup>1</sup>*Food Sciences & Technology, Allied Health Sciences, Superior University*, <sup>2</sup>*Department of Pharmacology, Azra Naheed Medical College, Superior University*, <sup>3</sup>*Faculty of Agriculture & Veterinary Sciences, Superior University*

**3:15 PM M114**

Productive energy (Arkansas Net Energy) is more sensitive than classic net energy determination to performance and actual net energy fractions for gain and maintenance

Diego Martinez\*, Nawin Suesuttajit, Cole Umberson, Craig Coon *University of Arkansas*

**3:30 PM M115**

Predicting processing weights and broiler economics with productive energy (Arkansas Net Energy)

Diego Martinez, Nawin Suesuttajit, Cole Umberson, Craig Coon\* *University of Arkansas*

**3:45 PM M116**

Wheat bran particle size influenced jejunal expression of nutrient transporter and ceca short chain fatty acid profile in broiler chickens receiving corn-soybean meal-based diets supplemented or not with a simbiotic

Shravani Veluri\*<sup>1</sup>, Gemma Gonzalez-ortiz<sup>2</sup>, Mike Bedford<sup>2</sup>, Oluyinka Olukosi<sup>1</sup> <sup>1</sup> *Department of Poultry Science, University of Georgia, <sup>2</sup>AB Vista and Feed Ingredients*

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



## **Environment Management I Animal Well-being**

Moderator: Dr. Ahmed Ali, Clemson

Room Number: B315

Monday, January 29, 2024

### **7:45 AM M117**

Deep learning algorithms for tracking individual chicken for locomotion analysis

Xiao Yang\*<sup>GS</sup>, Ramesh Bist, Bidur Paneru, Lilong Chai *University of Georgia*

### **8:00 AM M118**

Probiotic and diet treatment improves growth while reducing feed intake in breeder pullets housed in floor pens.

Nikolas Faust\*<sup>1GS</sup>, Mazette Croom<sup>1</sup>, Marvin Vides<sup>1</sup>, Rosemary Walzem<sup>1,2,1</sup> *Texas A&M University- Department of Poultry Science, <sup>2</sup>Texas A&M University- Graduate Faculty of Nutrition*

### **8:15 AM M119**

What's in a quack? Effects of Pekin duck vocalizations on conspecific physiology.

Jenna Schober\*<sup>GS</sup>, Serena Wesley, Isabella Taylor, Collette Plue, Melanie Bergam, Jeffrey Lucas, Gregory Fraley *Purdue University*

### **8:30 AM M120**

Changes in central dopamine and serotonin activity associated with age but not with preening cup use in grow-out Pekin ducks

Melanie Bergman\*<sup>1GS</sup>, Jenna Schober<sup>1</sup>, Alexandra Grief<sup>1</sup>, Richard Novak<sup>1</sup>, Collette Plue<sup>1</sup>, Drew Frey<sup>2</sup>, Heidi Parnin<sup>2</sup>, Gregory Fraley<sup>1,1</sup> *Animal Sciences, Purdue University, <sup>2</sup>Culver Duck Farms, Inc.*

### **8:45 AM M121**

The effects of dietary oregano oil on production performance, plasma chemistry, and egg quality traits of laying hens during early-lay phase.

Alexa Johnson\*<sup>GS</sup>, Gracie Anderson, Mireille Arguelles-Ramos, Ahmed Ali *Clemson University*

### **9:00 AM M122**

Influence of perch provision during rearing on musculoskeletal health of pullets

Mallory Anderson\*<sup>GS</sup>, Alexa Johnson, Cerano Harrison, Jeryl Jones, Ahmed Ali *Clemson University*

### **9:15 AM M123**

Effects of interrupting scotophase period on hen performance, welfare, and egg quality

Alexis Clark\*<sup>GS</sup>, Ari Bragg, Ahmed Ali, Mieille Argüelles-Ramos *Clemson University*

### **9:30 AM M124**

Assessing the relationship between stress and production in four strains of laying hens housed in a cage-free environment

Bhavisha Gulabrai\*<sup>GS</sup>, Kenneth Anderson, Sophie Chance, Allison Pullin, Aaron Kiess *North Carolina State University*

### **9:45 AM M125**

Evaluating the effects of depopulation treatments on corticosterone in laying hens

Kari Harding\*<sup>1GS</sup>, Sanjay ` Shah<sup>2</sup>, Ramon Malheiros<sup>1</sup>, Kenneth Anderson<sup>1,1</sup> *Prestage Department of Poultry Science, North Carolina State University, <sup>2</sup>Biological and Agricultural Engineering, North Carolina State University*

### **10:00 AM Break**

## **Environment Management II Animal Well-being**

Moderator: Dr. Brian Fairchild, UGA

Room Number: B315

Monday, January 29, 2024

### **10:15 AM M126**

Water consumption profiles of commercial free-range layers

William Strickland<sup>\*1GS</sup>, Michael Czarick, Brian Fairchild *University of Georgia*

### **10:30 AM M127**

Zero-shot image segmentation for monitoring thermal conditions of individual laying hens

Mahtab Saeidifar<sup>\*1GS</sup>, Guoming Li<sup>2</sup>, Lilong Chai<sup>2</sup>, Ramesh Bist<sup>2</sup> <sup>1</sup>*Institute for Artificial Intelligence, Franklin College of Arts and Sciences, University of Georgia*, <sup>2</sup>*Department of Poultry Science, College of Agricultural and Environmental Sciences, University of Georgia*

### **10:45 AM M128**

Automatic analysis of group-level activity of broilers with heat stress operations

Oluwadamilola Oso<sup>\*GS</sup>, Nicolas Mejia-Abaunza, Chongxiao Chen, Sammy Aggrey, Guoming Li *University of Georgia*

### **11:00 AM M129**

Reviewing the trait definition of mortality in broilers

Jennifer Richter<sup>\*1GS</sup>, Fernando Bussiman<sup>1</sup>, Jorge Hidalgo<sup>1</sup>, Vivian Breen<sup>2</sup>, Ignacy Misztal<sup>1</sup>, Daniela Lourenco<sup>1</sup> <sup>1</sup>*University of Georgia*, <sup>2</sup>*Cobb-Vantress, Inc.*

### **11:15 AM M130**

Chronic stress in fast- and slower-growing broilers raised in high- or low-complexity environments

Alexandra Ulans<sup>\*GS</sup>, Kathryn Walsh, Leonie Jacobs *Virginia Tech*

### **11:30 AM M131**

Using quantitative ultrasound machine as a noninvasive bone health assessment tool in broilers

Nicolas Mejia-Abaunza<sup>\*1GS</sup>, Catherine Fudge<sup>1</sup>, Muhammad Ali<sup>1</sup>, Jinqun Wang<sup>1</sup>, Austin Jasek<sup>2</sup>, Colwayne Morris<sup>2</sup>, Raquel Burin<sup>2</sup>, Duarte Neves<sup>2</sup>, Chongxiao Chen<sup>1</sup> <sup>1</sup>*University of Georgia*, <sup>2</sup>*Zinpro Corporation*

### **11:45 AM M132**

Influence of age and dietary fats on welfare response in broiler chickens.

Paul Omaliko<sup>\*1GS</sup>, Yewande Fasina<sup>1</sup>, Hayley Sutherland<sup>2</sup>, Peter Ferket<sup>3</sup>, Marisa Erasmus<sup>2</sup> <sup>1</sup>*North Carolina Agricultural and Technical State University*, <sup>2</sup>*Purdue University*, <sup>3</sup>*North Carolina State University*

### **12:00 PM LUNCH**

## **Environment Management III Animal Well-being**

Moderator: Dr. John Linhoss, Auburn

Room Number: B315

Monday, January 29, 2024

### **1:00 PM M133**

Automatic Gait Score Evaluation for Individual Broilers in Group Settings Using Deep Learning and Machine Learning Models

Mustafa Jaihuni\*<sup>1</sup>, yang zhao<sup>1</sup>, Hao Gan<sup>2</sup>, Tom Tabler<sup>1</sup>, Hairong Qi<sup>3</sup>, Maria Prado<sup>1</sup> <sup>1</sup>*Department of Animal Science, University of Tennessee Knoxville*, <sup>2</sup>*Department of Biosystems Engineering, University of Tennessee Knoxville*, <sup>3</sup>*Department of Electrical Engineering and Computer Science, University of Tennessee Knoxville*

### **1:15 PM M134**

An evaluation of egg quality parameters across two multi-tiered aviary designs

Kathryn Baugh\*<sup>1</sup>, Cara Robison<sup>1</sup>, Janice Siegford<sup>1</sup>, Ahmed Ali<sup>2</sup> <sup>1</sup>*Michigan State University*, <sup>2</sup>*Clemson University*

### **1:30 PM M135**

Evaluating carcass characteristics of three Naked Neck genotypes reared under different production systems

Arif Hameed\*<sup>1</sup>, Shahid Mehmood<sup>1</sup>, Sohail Ahmad<sup>1</sup>, Arshad Javid<sup>2</sup> <sup>1</sup>*Department of Poultry Production, Faculty of Animal Production and Technology, University of Veterinary and Animal Sciences, Lahore, Pakistan*, <sup>2</sup>*Department of Wildlife and Ecology, Faculty of Fisheries and Wildlife, University of Veterinary and Animal Sciences, Lahore, Pakistan*

## **Environment Management IV Environmental Impacts**

Moderator: Dr. John Linhoss, Auburn

Room Number: B315

Monday, January 29, 2024

### **1:45 PM M136**

Validation of a rail mounted robot in a commercial broiler house

Tanner Thornton\*<sup>GS</sup>, Yang Zhao, Shawn Hawkins, Robert Burns, Tom Tabler *University of Tennessee-Knoxville*

### **2:00 PM M137**

Increase broiler movement effect on woody breast occurrence in a fast and slower growing strain

Cirenio Hisasaga\*<sup>1,2GS</sup>, Maja M. Makagon<sup>1</sup> *Center for Animal Welfare, Department of Animal Science, University of California, <sup>2</sup>Animal Biology Graduate Group, University of California*

### **2:15 PM M138**

Individual and combined effects of the addition of organic acids in water on jejunum and ileum histomorphometry and cecal microbiome of broilers with or without *Campylobacter* inoculation

Luis Munoz\*<sup>1GS</sup>, Li Zhang<sup>2</sup>, Linan Jia<sup>2</sup>, Haley Nabors<sup>2</sup>, Matthew Bailey<sup>1</sup>, Cesar Escobar<sup>1</sup>, Dianna Bourassa<sup>1</sup>, K Macklin<sup>2</sup> *<sup>1</sup>Auburn University, <sup>2</sup>Mississippi State University*

### **2:30 PM M139**

Characterizing the microbiome of litter and water lines of broiler farms with varying water quality.

Tolulope Tiwa Ogundipe\*<sup>1GS</sup>, Li Zhang<sup>2</sup>, Tomi Obe<sup>1</sup> *<sup>1</sup>University of Arkansas, <sup>2</sup>Mississippi State University*

### **2:45 PM M140**

Impact of sodium bisulfate application to litter, feed, and water on broiler performance and litter quality during a 42 day grow-out

Jorge Urrutia\*<sup>1GS</sup>, Craig Coufal<sup>2</sup>, Kelley Wamsley<sup>1</sup> *<sup>1</sup>Mississippi State University, <sup>2</sup>Jones Hamilton Company*

### **3:00 PM M141**

Effect of two commercial broiler house window configurations on light intensity and uniformity

Joshua Etherton\*<sup>1GS</sup>, John Linhoss<sup>1</sup>, Jeremiah Davis<sup>2</sup>, Jessica Starkey<sup>1</sup>, Joseph Purswell<sup>3</sup> *<sup>1</sup>Auburn University, <sup>2</sup>Auburn University, National Poultry Technology Center & Biosystems Engineering, <sup>3</sup>USDA ARS Poultry Research Unit, Mississippi State*

### **3:15 PM M142**

Commingled or sex separate rearing with standard or increased feed intake on body composition and reproductive performance of broiler breeder pullets

Hunter Mason\*<sup>GS</sup>, Luis Avila, Venkata Choppa, Woo Kim, Jeanna Wilson *University of Georgia*

### **3:30 PM M143**

Assessing the risk of antimicrobial resistant enterococcal infections in humans due to bacitracin usage in poultry

Randall Singer\*, Timothy Johnson *University of Minnesota*

### **3:45 PM M144**

Effect of a calcium and magnesium source on organ physiology, blood mineral profile and general performance of White Laying hens.

Fausto Solis\*, Rajasekhar Kasula,, Christopher Olinger *Wenger Nutrient Science and Innovation Center (WNSIC), The Wenger Group,*

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

## Metabolism & Nutrition VII Feed Additives

Moderator: Dr. Theresia Lavergne, Natural Biologics

Room Number: B311

Tuesday, January 30, 2024

### 7:45 AM T144

Effect of a slow vs a fast soy protein source in starter diets on broiler performance

Megan Bible\*<sup>1</sup>, Simone Rasmussen<sup>2</sup>, Alfred Blanch<sup>2</sup> <sup>1</sup>*Hamlet Protein Inc*, <sup>2</sup>*Hamlet Protein A/S*

### 8:00 AM T145

Impact of Black Soldier Fly Larvae Frass (EnviroFeed) on Broiler Growth Performance

Daniel Adams\*<sup>1</sup>, Brett Lumpkins<sup>2</sup>, Greg Mathis<sup>2</sup>, Elizabeth Koutsos<sup>1</sup> <sup>1</sup>*EnviroFlight LLC*, <sup>2</sup>*Southern Poultry Feed & Research*

### 8:15 AM T146

Comparative efficacy of a Bacillus-based direct fed microbial and an antibiotic on performance and intestinal morphology of broiler chickens

Hector Leyva-Jimenez\*, Yemi Burden, Katherine McCormick, Derek Haag, Adrienne Woodward, Brian Dirks *United Animal Health Inc.*

### 8:30 AM T147

From microbe to bird: In-depth evaluation of a DFM application during intestinal dysbiosis

Sasha van der Klein\*, Kirsty Gibbs *Danisco Animal Nutrition & Health (IFF)*

### 8:45 AM T148

Reducing the burden of necrotic enteritis: a cross study analysis on water applied DFMs in broilers

Sasha van der Klein\*, Kirsty Gibbs *Danisco Animal Nutrition & Health (IFF)*

### 9:00 AM T149

The effect of an all-natural blend of yeast complex carbohydrates and yeast culture metabolites on broiler growth performance, breast meat yield, and Salmonella prevalence

Theresia Lavergne\*, Carl Jones, Charlie Elrod *Natural Biologics, Inc.*

### 9:15 AM T150

A microencapsulated blend of botanicals can enhance growth performance and improve gut health of broiler chickens

Benedetta Tugnoli\*<sup>1</sup>, Martina Felici<sup>2</sup>, Andrea Piva<sup>1,2</sup>, Ester Grilli<sup>2,3</sup> <sup>1</sup>*Vetagro S.p.A.*, <sup>2</sup>*University of Bologna DIMEVET*, <sup>3</sup>*Vetagro, Inc*

### 9:30 AM T151

Reduction in aminoglycoside and macrolide antibiotic resistance genes in E. coli isolates recovered from broilers fed a feed additive over 15 months.

Lindsay Leonard\*, Enid McKinley, Jodi Delago, Alexandra Smith *Specialty Products Division, Arm and Hammer Animal and Food Production, Church and Dwight Co., Inc*

### 9:45 AM T152

Reducing the bioavailability of a mix of mycotoxins in broiler chickens with a clay- and algae-based detoxifier

Marie Gallissot\*<sup>1</sup>, Sofie Rutjens<sup>2</sup>, Maria Rodriguez<sup>1</sup>, Mathias Devreese<sup>2</sup> <sup>1</sup>*Olmix Group*, <sup>2</sup>*Ghent University, Faculty of Veterinary Medicine*

### 10:00 AM T153

Impact of Isoquinoline Alkaloids and Essential Oils addition in broiler feed on intestinal health.

Kelvin da Silva<sup>1</sup>, Nbia Oliveira<sup>1</sup>, Elisangela dos Santos<sup>1</sup>, Dimitri de Freitas<sup>2</sup>, Arthur Massei<sup>2</sup>, Cleverson Souza\*<sup>2</sup> <sup>1</sup>*Pluma Agroavcola*, <sup>2</sup>*Phytobiotics*

### 10:15 AM T154

Yeast cell wall with essential oil improves performance in broilers challenged with coccidiosis

Fernando Souza<sup>1</sup>, Melina Bonato\*<sup>1</sup>, Ricardo Barbalho<sup>1</sup>, Lcio Arajo<sup>2</sup>, Aaron Kiess<sup>3</sup>, Claudia Castaeda<sup>4</sup> <sup>1</sup>*ICC Brazil*, <sup>2</sup>*Sao Paulo University*, <sup>3</sup>*North Carolina State University*, <sup>4</sup>*Engrain*

### 10:30 AM T155

Multiple-trial analysis shows improved broiler performance for a blend of natural essential oils

Ellen Hambrecht<sup>1</sup>, Melchior de Bruin\*<sup>2</sup>, Marcos Rostagno<sup>3</sup> <sup>1</sup>*Selko*, <sup>2</sup>*Nutreco Exploration*, <sup>3</sup>*Selko USA*

**10:45 AM T156**

Reduction of mortality in broiler chickens as a result of feeding a stimbiotic  
Gemma González-Ortiz\*, Michael Bedford *AB Vista*

**11:00 AM Dendy Keynote Lecture**

Moderator: Dr. Tomi Obe, UARK

Room Number: B313

Tuesday, January 30, 2024

Safeguarding the future of poultry: Mitigating activist Threats

Hannah Thompson-Weeman\* *Animal Agriculture Alliance*

**12:00 PM SCAD Business Meeting**

Room Number: B312

**12:00 PM SPSS Business Meeting**

Room Number: B314

## SCAD II

Moderators: Dr. Sierra Slaughterback, Boehringer Ingelheim and Dr. Tak Niino, Zoetis  
Room Number: B312

Tuesday, January 30, 2024

### 7:00 AM T157

Gene expression in Harderian glands and tracheas with maternal antibodies 24 and 48 hours after vaccination with LaSota Newcastle Disease Virus

Taina Lopes<sup>\*1</sup>, Jannis Nankemann<sup>1</sup>, Andrea Pietruska<sup>1</sup>, Raimundo Marquinez<sup>1</sup>, Cassandra Kitchens<sup>1</sup>, Camila Guevara<sup>1</sup>, Haroldo Toro<sup>1</sup>, Ruediger Hauck<sup>1,2</sup> <sup>1</sup>*Department of Pathobiology, Auburn University*, <sup>2</sup>*Department of Poultry Science, Auburn University*

### 7:15 AM T158

Rapid access to on-farm biosecurity expedites the U.S. poultry industry's response to and recovery from endemic and emerging diseases.

Jason Galvis<sup>\*</sup>, Rocio Crespo, Lilian Hutchens, Kelsey Mills, Gustavo Machado *Department of Population Health and Pathobiology, College of Veterinary Medicine, North Carolina State University*

### 7:30 AM T159

Characterization of Castellaniella spp.: a new bacterial pathogen associated with mortality in broiler breeders

Yi-Chen Luo<sup>\*GS</sup>, Tiffani Allen, Jenny Nicholds, Grazieli Maboni *university of georgia*

### 7:45 AM T160

Supplementation of a sulfate polysaccharide extracted from marine algae positively influences performance and gut integrity of broilers during a necrotic enteritis challenge

Candice Blue<sup>\*1GS</sup>, Maria Garcia-Suarez<sup>2</sup>, Elise Nacer-Khodja<sup>2</sup>, Rami Dalloul<sup>1</sup> <sup>1</sup>*University of Georgia*, <sup>2</sup>*Olmix SA*

### 8:00 AM T161

Major histocompatibility complex B15 haplotype and alloantigen types D and E exhibit association with resistance traits to coccidiosis challenge in chickens

Abhisek Niraula<sup>\*1GS</sup>, Robert Taylor, Jr.<sup>2</sup>, Janet Fulton<sup>3</sup>, Rami Dalloul<sup>1</sup> <sup>1</sup>*University of Georgia*, <sup>2</sup>*West Virginia University*, <sup>3</sup>*Hy-Line International*

### 8:15 AM T162

Increasing dietary indigestible protein may exacerbate effects of coccidia challenge in broiler chickens

Jung Sung<sup>\*GS</sup>, Olayiwola Adeola *Purdue University*

### 8:30 AM T163

Impact of dietary inclusion of a yeast-based carbohydrate blend on the gut microbiota and horizontal transmission of *Histomonas meleagridis* in turkey poults

Aaron Forga<sup>\*1GS</sup>, Alessandro Rocchi<sup>1</sup>, Kyle Teague<sup>1</sup>, Carl Jones<sup>2</sup>, Charlie Elrod<sup>2</sup>, Mariana Nascimento<sup>3</sup>, Theresia Lavergne<sup>2</sup>, Danielle Graham<sup>1</sup> <sup>1</sup>*Division of Agriculture, Department of Poultry Science, University of Arkansas*, <sup>2</sup>*Natural Biologics, Inc.*, <sup>3</sup>*Sapiens*

### 8:45 AM T164

Comparison of the standard operation and output metrics of two commercial field spray vaccinators

Cory Yarbrough<sup>\*GS</sup>, Brian Jordan *University of Georgia*

### 9:00 AM T165

Evaluation of spray application with *Bacillus amyloliquefaciens* spores as an alternative to formaldehyde fumigation during the hatching phase

Mitchell Rowland<sup>\*GS</sup>, Aaron Forga, Makenly Coles, Billy Hargis, Christine Vuong, Danielle Graham *University of Arkansas*

### 9:15 AM T166

Development of a horizontal transmission model to assess the effects of exposure to *Enterococcus cecorum* during the hatching phase on performance and organ involvement in young broiler chickens

James Higuera<sup>\*1GS</sup>, Marcela Arango<sup>1</sup>, Aaron Forga<sup>1</sup>, Mitchell Rowland<sup>1</sup>, Jundi Liu<sup>2</sup>, Ross Wolfenden<sup>2</sup>, Danielle Graham<sup>1</sup> <sup>1</sup>*Department of Poultry Science, University of Arkansas Division of Agriculture*, <sup>2</sup>*Animal Nutrition BU, Eastman Chemical Company*

### **9:30 AM T167**

Isolation of *Enterococcus faecalis* from hatchery samples and yolk sacs of pullets and broiler chickens

Hugo Ramirez\*<sup>GS</sup>, Amari Shields, Marcela Arango, Jay Kay Thornton, Martha Pulido - Landinez  
*Mississippi State University*

### **9:45 AM T168**

Identification and characterization of *Enterococcus cecorum* recovered from commercial poultry cases.

Marcela Arango\*<sup>GS</sup>, Rebecca Mackey, Jay Kay Thornton, Natalie Manginsay, Martha Pulido-Landinez  
*Mississippi State University*

### **10:00 AM T169**

Avian pathogenic *Escherichia coli* (APEC) a versatile pathogen - but what have we learned?

Catherine Logue\*, Klao Runacharoon, Julia Ienes Lima, Yu-Yang Tsai, Lisa Nolan  
*University of Georgia*

### **10:15 AM T170**

Evaluation of *Enterococcus cecorum* Tissue Prevalence when Broilers receive two different Direct Fed Microbials

Matthew Jones\*<sup>1</sup>, Charles Hofacre<sup>1</sup>, Jennie Baxter<sup>1</sup>, M. Suyemoto<sup>2</sup>, Roy Berghaus<sup>3</sup>, Enid McKinley<sup>4</sup>, Jodi Delago<sup>4</sup>, Alexandra Smith<sup>4</sup><sup>1</sup>*Southern Poultry Research Group*, <sup>2</sup>*Department of Population Health and Pathobiology, College of Veterinary Medicine, North Carolina State University*, <sup>3</sup>*Department of Population Health, College of Veterinary Medicine, University of Georgia*, <sup>4</sup>*Arm and Hammer Animal Nutrition and Food Production*

### **10:30 AM T171**

Genetic analysis of tylosin-resistant and tylosin-susceptible *Mycoplasma synoviae* from the USA  
Eniope Oluwayinka\*, Naola Ferguson-Noel  
*Department of Population Health, University of Georgia*

### **10:45 AM T172**

Development of an anti-HRV Chicken Monoclonal Antibody using Single B-cell Cloning

Jill Skrobarczyk\*<sup>1</sup>, Cameron Martin<sup>1</sup>, Suresh Pillai<sup>2</sup>, Luc Berghman<sup>1</sup><sup>1</sup>*Department of Poultry Science, Texas A&M AgriLife Research*, <sup>2</sup>*Department of Food Science and Technology, Texas A&M AgriLife Research*

### **11:00 AM Dendy Keynote Lecture**

Moderator: Dr. Tomi Obe, UARK

Room Number: B313

Tuesday, January 30, 2024

Safeguarding the future of poultry: Mitigating activist Threats

Hannah Thompson-Weeman\* *Animal Agriculture Alliance*

### **12:00 PM SCAD Business Meeting**

Room Number: B312

### **12:00 PM SPSS Business Meeting**

Room Number: B314



## Metabolism & Nutrition VIII Feed Additives

Moderator: Dr. Eric Sobotik, Chr. Hansen

Room Number: B313

Tuesday, January 30, 2024

### 8:15 AM T173

Development of a bacteriophage cocktail with high lytic efficacy against *Salmonella enterica* in vitro and in vivo

Daniel Castillo\*, Nicolás Cifuentes, Matias Aguilera, Soledad Ulloa, Luis Leon, Christian Pieringer, Constanza Sandoval, Hans Pieringer, Pablo Cifuentes *PhageLab SpA*

### 8:30 AM T174

Effect of a next generation phytogetic blend on broiler growth performance under challenged conditions

Meghan Schwartz\*, Prashant Mishra, Stacie Crowder *PMI*

### 8:45 AM T175

Effect of phytogetic feed additives on live performance and meat quality of older broilers

Megan Koppen\*<sup>1</sup>, Rob Payne<sup>1</sup>, Manuel Da Costa<sup>1</sup>, Jorge Urrutia<sup>2</sup>, Kelley Wamsley<sup>2</sup>, Li Zhang<sup>2</sup>, Dalton Dennehy<sup>2</sup> <sup>1</sup>*Cargill Animal Nutrition*, <sup>2</sup>*Mississippi State University*

### 9:00 AM T176

Effect of dietary blends of short chain fatty acids and phytoGENICS on performance and oocyst shedding in broiler chickens subjected to repeat challenge with a live coccidiosis vaccine

Aaron Forga<sup>1</sup>, James Higuaita<sup>1</sup>, Snehal Tawde<sup>2</sup>, Antonia Tacconi<sup>2</sup>, Jonathan Broomhead<sup>2</sup>, Samuel Rochell<sup>3</sup>, Danielle Graham\*<sup>1</sup> <sup>1</sup>*Department of Poultry Science, University of Arkansas Division of Agriculture*, <sup>2</sup>*Perstorp Animal Nutrition*, <sup>3</sup>*Department of Poultry Science, Auburn University*

### 9:15 AM T177

Effect of liver conditioner pronutrients to prevent and ameliorate the effects of liver stress in layers

David Díez\*<sup>1</sup>, Connie Gallardo<sup>2</sup>, Cecilia Lugo<sup>1</sup>, Anna Tesouro<sup>1</sup> <sup>1</sup>*Biovet S.A.*, <sup>2</sup>*Universidad Científica del Sur*

### 9:30 AM T178

Effects of a commercial triple-strain *Bacillus*-based probiotic on cecal colonization with *Salmonella Enteritidis* in commercial layer pullets

Eric Sobotik\*<sup>1</sup>, Kay Russo<sup>1</sup>, Steve Lerner<sup>1</sup>, Dorthe Sandvang<sup>1</sup>, Antoine Meuter<sup>1</sup>, Hannah McBride<sup>2</sup>, George Girgis<sup>2</sup> <sup>1</sup>*Chr. Hansen, Inc., Animal and Plant Health & Nutrition*, <sup>2</sup>*Nevysta Laboratory, Iowa State University Research Park*

### 9:45 AM T179

The association of probiotic and prebiotic products in the feeding of laying hens minimizes the negative effects caused by heat waves.

Tiago Urbano\*<sup>1</sup>, Fabrizio Matté<sup>1</sup>, Patrick Roieski<sup>1</sup>, Paulo Oliveira<sup>2</sup>, Marcel Boiago<sup>2</sup>, Antony Comin<sup>2</sup> <sup>1</sup>*Vetanco Brasil*, <sup>2</sup>*University of Santa Catarina State*

### 10:00 AM T180

Double-buffered sodium butyrate addition improved egg mass and feed efficiency of layers fed low energy-protein diet

Julián Melo\*<sup>1</sup>, Matías Voelker<sup>1</sup>, Agustín Ablanado<sup>2</sup>, Clemence Marecaille<sup>3</sup>, Xavier Roulleau<sup>3</sup> <sup>1</sup>*Universidad Nacional de Luján*, <sup>2</sup>*Universidad de Buenos Aires*, <sup>3</sup>*Dietaxion SAS*

### 10:15 AM T181

Enhancing performance and egg quality of commercial laying hens through fiber-rich diets supplemented with stimbiotic

Amanda Lima<sup>1</sup>, Adiel Lima<sup>1</sup>, Paloma Souza<sup>1</sup>, Carlos Nascimento<sup>1</sup>, Matheus Ramalho Lima<sup>2</sup>, Fernando Perazzo Costa<sup>1</sup>, Gilson Gomes<sup>3</sup>, Alexandre Brito<sup>4</sup>, Xavière Rousseau\*<sup>5</sup>, Thiago Tedeschi dos Santos<sup>6</sup> <sup>1</sup>*Federal University of Paraíba | UFPB*, <sup>2</sup>*Federal University of the Semi-Arid Region | UFERSA*, <sup>3</sup>*AB Vista | EUA*, <sup>4</sup>*AB Vista | Brazil*, <sup>5</sup>*AB Vista | France*, <sup>6</sup>*AB Vista | UK*

### 10:30 AM T182

Benefits of supplementing breeder hens with a standardized dry grape extract on their bones and eggs' quality

Paul Engler\*<sup>1</sup>, Dominique Chavatte<sup>2</sup>, Mohammed BENARBIA<sup>1</sup> <sup>1</sup>*Nor-Feed SAS*, <sup>2</sup>*DLJ Consultant*

**10:45 AM T183**

Growth performance of turkey poults fed diets containing lysophospholipids  
Chan Sol Park\*<sup>1</sup>, Dan Moore<sup>2</sup>, Hilary Pavlidis<sup>3</sup>, Janet Snow<sup>3</sup>, Jae Hark Jeong<sup>1</sup> <sup>1</sup>*Pathway Intermediates USA*, <sup>2</sup>*Colorado Quality Research*, <sup>3</sup>*CSA Animal Nutrition*

**11:00 AM Dendy Keynote Lecture**

Moderator: Dr. Tomi Obe, UARK

Room Number: B313

Tuesday, January 30, 2024

Safeguarding the future of poultry: Mitigating activist Threats

Hannah Thompson-Weeman\* *Animal Agriculture Alliance*

**12:00 PM SCAD Business Meeting**

Room Number: B312

**12:00 PM SPSS Business Meeting**

Room Number: B314

## **Metabolism & Nutrition IX Feed Additives**

Moderator: Dr. Wilmer Pacheco, Auburn

Room Number: B314

Tuesday, January 30, 2024

### **8:00 AM T184**

Microbiome Modulation by a precision biotic leads to increased production of short-chain fatty acids in the intestine of broiler chickens

Cristiano Bortoluzzi\*, Mick Watson *DSM-Firmenich*

### **8:15 AM T185**

Evaluation of increasing doses of Eastman Entero-Nova™ 220C on broiler performance in a 48-day floor pen trial

Jundi Liu\*<sup>1</sup>, Ross Wolfenden<sup>1</sup>, Matthew Jones<sup>2</sup>, Charles Hofacre<sup>2</sup> <sup>1</sup>*Eastman Chemical Company*, <sup>2</sup>*Southern Poultry Research Group, Inc.*

### **8:30 AM T186**

The use of PFA with nutritional matrix values can decrease feed costs and maintain the production performance of broilers

Manu De Laet\*, Caroline Donaldson, Yann Fournis, Roberto Montanhini Neto *Cargill Animal Nutrition - Global SMT Additives*

### **8:45 AM T187**

Effects of a triple-strain Bacillus-based probiotic in ameliorating stress-related impacts on broiler gut microbiota for improved well-being and productivity

Antoine Meuter\*<sup>1</sup>, Guilherme Borchardt<sup>1</sup>, Gisle Vestergaard<sup>1</sup>, Eric Sobotik<sup>2</sup> <sup>1</sup>*Chr. Hansen A/S*, <sup>2</sup>*Chr. Hansen Inc.*

### **9:00 AM T189**

Feed fiber profile and the use of stimbiotic influence broilers productivity and hindgut fermentation

Xavière ROUSSEAU\*, Dimcho DJOUVINOV, Gilson A. Gomes *AB Vista*

### **9:15 AM T190**

Effects of organic acids blend supplementation via water on the performance of broiler chickens and on return of the investment

Andrea Silvestrim\*<sup>1</sup>, Lane Pineda<sup>1</sup>, Karolina von Zuben Augusto<sup>1</sup>, In Ho Kim<sup>2</sup> <sup>1</sup>*Selko*, <sup>2</sup>*Dankook University, Department of Animal Resource and Science*

### **9:30 AM T191**

Practical application of multi-mycotoxin biomarker analysis from dried blood spots to assess mycotoxin exposure risk and performance impacts of a novel mycotoxin intervention in broilers

Don Ritter\*<sup>1</sup>, Arnau Vidal<sup>2</sup> <sup>1</sup>*Innovad USA*, <sup>2</sup>*Innovad Global*

### **9:45 AM T192**

A synergistic in-feed Technology enhances the intestinal epithelial barrier via the upregulation of cytoprotective & antioxidant proteins in broilers under dietary challenges in real farming conditions.

Alireza Khadem<sup>1,2</sup>, DON Ritter\*<sup>2</sup>, Konstantinos C. Mountzouris<sup>3</sup>, Christos Gougoulias<sup>2</sup> <sup>1</sup>*Ghent University*, <sup>2</sup>*Innovad SA*, <sup>3</sup>*Department of Animal Science, Agricultural University of Athens*

### **10:00 AM T193**

Effect of a probiotics on body weight, feed conversion, and mortality of Cobb 500 and Ross 708 broilers challenged with a coccidiosis vaccine at 20 times the recommended dose

John Schleifer\*, Kristy Dorton, Gary Reznik, Shameer Rasheed, Mark LaVorgna, Mahmoud Masadeh *Devenish Nutrition LLC*

## **Metabolism and Nutrition X Vitamins and Minerals**

Moderator: Dr. Wilmer Pacheco, Auburn

Room Number: B314

Tuesday, January 30, 2024

### **10:15 AM T194**

Would correlative elemental imaging explain the assimilation of essential trace elements in eggshell?

Iris Valido<sup>1,2</sup>, Rosa Mary Lopez Alvarez<sup>1</sup>, Florent Penen<sup>1</sup>, Maria Angels Subirana<sup>1</sup>, Stéphane Faucher<sup>3</sup>, Pascale Senechal<sup>3</sup>, Peter Moonen<sup>3</sup>, Sandra Mounicou<sup>1</sup>, Yron Joseph Manaig<sup>\*4</sup>, Dirk Schaumlöffel<sup>1</sup> <sup>1</sup>CNRS, Université de Pau et des Pays de l'Adour IPREM UMR, <sup>2</sup>Universitat Autònoma de Barcelona, Centre GTS, Departament de Química, <sup>3</sup>CNRS, Université de Pau et des Pays de l'Adour, DMEX, IPRA FR, <sup>4</sup>Animine

### **10:30 AM T195**

Effect of chromium propionate on insulin sensitivity and performance of turkeys

J. Spears<sup>\*1</sup>, K. Lloyd<sup>1</sup>, K. Krafka<sup>2</sup>, J. Hyda<sup>2</sup>, J. Grimes<sup>1</sup> <sup>1</sup>North Carolina State University, <sup>2</sup>Kemin Agrifoods North America, Inc.,

### **10:45 AM T196**

Role of Vitagene-Regulator for comprehensive stress and immunosuppression management in poultry flocks

Woo Kim<sup>1</sup>, Shivi Maini<sup>\*2</sup> <sup>1</sup>Poultry Science Department, <sup>2</sup>Indian Herbs

## **11:00 AM Dendy Keynote Lecture**

Moderator: Dr. Tomi Obe, UARK

Room Number: B313

Tuesday, January 30, 2024

Safeguarding the future of poultry: Mitigating activist Threats

Hannah Thompson-Weeman<sup>\*</sup> *Animal Agriculture Alliance*

### **12:00 PM SCAD Business Meeting**

Room Number: B312

### **12:00 PM SPSS Business Meeting**

Room Number: B314

## **Metabolism & Nutrition XI Vitamins and Minerals**

Moderator: Dr. Frances Yan, Novus International

Room Number: B315

Tuesday, January 30, 2024

### **7:45 AM T197**

Increasing the dietary inclusion of a soluble limestone has an impact on the digestibility of calcium and phosphorus and phytase efficacy in broilers

hengxiao zhai<sup>1</sup>, Carrie Walk<sup>2</sup>, Cristiano Bortoluzzi\*<sup>2</sup>, Qian Zhang<sup>1</sup> <sup>1</sup>*dsm-firmenich (China) Animal Nutrition Research Center*, <sup>2</sup>*dsm-firmenich Nutritional Products*

### **8:00 AM T198**

Broiler and layer performance and health under LPS challenge when fed different sources of minerals.

Gavin Boerboom\* *Selko*

### **8:15 AM T199**

Feeding methionine hydroxyl analogue chelated trace minerals reduces mineral excretion to the environment in broiler chickens

Thi Hiep Dao<sup>1</sup>, Hoang Duy Nguyen<sup>1</sup>, Amy Fay Moss<sup>1</sup>, Frances Yan\*<sup>2</sup>, Hugo Romero<sup>2</sup> <sup>1</sup>*University of New England*, <sup>2</sup>*Novus International, Inc.*

### **8:30 AM T200**

Supplementation of Cu Methionine-Hydroxy-Analogue Chelate maintains chickens' performance and reduces mineral excretion and foot pad dermatitis

Kelen Zavarize\*<sup>1</sup>, David Torres<sup>1</sup>, Gabriela Cardoso<sup>1</sup>, Jovanir Fernandes<sup>2</sup>, Sabrina Palma<sup>2</sup> <sup>1</sup>*Novus*, <sup>2</sup>*Universidade Federal do Paraná*

### **8:45 AM T201**

Evaluation of supplemented zinc amino acid complexed mineral on performance of broilers fed diets with different calcium and phosphorous recommendations

Cibele Torres\*<sup>1</sup>, Kyle Venter<sup>2</sup>, Roselina Angel<sup>3</sup>, Peter Plumstead<sup>2</sup>, Leonardo Linares<sup>1</sup> <sup>1</sup>*Zinpro Animal Nutrition*, <sup>2</sup>*Neuro Livestock Research*, <sup>3</sup>*Department of Animal and Avian Sciences, University of Maryland*,

### **9:00 AM T202**

Effect of chelated trace minerals in laying hens during a second production period after molting

HUGO ROMERO-SANCHEZ\*<sup>1</sup>, David Sanchez Torres<sup>1</sup>, Ingrid Martinez<sup>1</sup>, Frances Yan<sup>1</sup>, Maria Castaneda<sup>2,3</sup> <sup>1</sup>*Novus International Inc*, <sup>2</sup>*AB Vista Mexico*, <sup>3</sup>*Universidad Autonoma de Mexico*

## **Environment Management V Animal Well-Being**

Moderator: Dr. Greg Fraley, Purdue

Room Number: B315

Tuesday, January 30, 2024

### **9:15 AM T203**

Transcriptional profiling of stress response genes in poultry broilers exposed to environmental heat stress

Woo Kim<sup>1</sup>, Shivi Maini<sup>\*2</sup> <sup>1</sup>*Poultry Science Department, UGA*, <sup>2</sup>*Indian Herbs*

### **9:30 AM T204**

Light-emitting diodes can modulate a chicken's embryonic growth, hatching performance and chick quality

Muhammad Faisal Riaz<sup>\*1,2</sup>, Jibril Hussain<sup>2</sup>, Sohail Ahmad<sup>2</sup>, Atif Rehman<sup>1</sup>, Muhammad Asif Raza<sup>1</sup>, Junaid Ali Khan<sup>1</sup> <sup>1</sup>*Department of Poultry Science, Muhammad Nawaz Shareef University of Agriculture*, <sup>2</sup>*Department of Poultry Production, University of Veterinary and Animal Sciences*

### **9:45 AM T205**

Rose colored glasses: impact of colored LEDs and lighting types on Pekin duck visualization of their environment.

Gregory Fraley<sup>\*</sup>, Patrice Baumhardt, Darrin Karcher, Esteban Fernandez-Juricic *Purdue University*

### **10:00 AM T206**

Effects of enrichment hut on natural behavior and leg-health of broilers in light-enriched commercial houses

Seong Kang<sup>\*1</sup>, Karen Christensen<sup>2</sup> <sup>1</sup>*University of Arkansas, Department of Poultry Science*, <sup>2</sup>*Tyson Foods, Inc*

### **10:15 AM T207**

Effect of a calcium and magnesium source on organ physiology, blood mineral profile, footpad, and general performance of broilers chickens.

Fausto Solis<sup>\*</sup>, Rajasekhar, Kasula,, Christopher Olinger *Wenger Nutrient Science and Innovation Center (WNSIC), The Wenger Group*,

### **10:30 AM T208**

Ghrelin synthesis and receptors in regions of the chick gastrointestinal tract and putative cholinergic control

Colin Scanes<sup>\*1</sup>, Klaudia Jaszczka<sup>2</sup>, Krystyna Pierzchala-Koziec<sup>2</sup> <sup>1</sup>*University of Wisconsin Milwaukee*, <sup>2</sup>*University of Agriculture in Krakow, Poland*

### **10:45 AM T209**

Effects of unlimited access to alfalfa straw on performance and behavior in broiler breeder pullets

Rick van Emous<sup>\*</sup> *Wageningen Livestock Research*

## **11:00 AM Dendy Keynote Lecture**

Moderator: Dr. Tomi Obe, UARK

Room Number: B313

Tuesday, January 30, 2024

Safeguarding the future of poultry: Mitigating activist Threats

Hannah Thompson-Weeman<sup>\*</sup> *Animal Agriculture Alliance*

## **12:00 PM SCAD Business Meeting**

Room Number: B312

## **12:00 PM SPSS Business Meeting**

Room Number: B314

## POSTER SESSIONS

Moderators: Dr. Nikki Shariat, UGA and Dr. Colwayne Morris, Zinpro

Monday January 29, 2024

4:00-6:00 PM

Room Number: B313 Foyer

### Physiology, Endocrinology and Reproduction: Broilers, Turkeys

#### P211

Experimental infection of turkeys with *Clostridium septicum* strains and assessment of immune responses during Clostridial dermatitis disease development

Valeria Criollo Vinueza<sup>\*1GS</sup>, Ravi Kulkarni<sup>1</sup>, Carissa Gaghan<sup>1</sup>, Rocio Crespo<sup>1</sup>, Oscar Fletcher<sup>1</sup>, Anil Thachil<sup>2</sup> <sup>1</sup>North Carolina State University, <sup>2</sup>Rollins Lab

#### P212

Coinfections Effects of Histomoniasis (Blackhead) with *Eimeria* spp. and *E. coli* on Mortality, Growth Performance, Lesion Scores, and Gut Permeability in Turkey Poults

Hamid reza Rafieian-Naeini<sup>\*GS</sup>, Catherine Fudge, Chongxiao Chen, Hamid Reza Rafieian Naeini UGA

#### P213

Differences in phenotypic traits and fatty acid composition of conventional and slow-growing broiler chicks.

Lindsey Eppinger<sup>\*1GS</sup>, Lindsay Brown<sup>2</sup>, Brynn Voy<sup>1</sup> <sup>1</sup>University of Tennessee, Department of Animal Science, <sup>2</sup>University of Tennessee, Department of Chemistry

#### P214

Effect of growth rate in the physiology of thyrotropic and corticotropic axes in a commercial broiler strain

Nabin Neupane<sup>\*</sup>, Laura Ellestad, Shailes Bhattra, Colin Barcelo, Prafulla Regmi University of Georgia

#### P215

Host defense peptide response of heritage and modern broiler breeds during subclinical necrotic enteritis

Ali Calik<sup>\*</sup>, Candice Blue, Laney Froebel, Rami Dalloul Department of Poultry Science, University of Georgia

## **Physiology, Endocrinology and Reproduction: Layers, Breeders**

### **P216**

Evaluating the vertical transmission potential of Salmonella Reading outbreak and non-outbreak strains

Abubakar Isah\*<sup>1GS</sup>, Reshma Ramachandran<sup>1</sup>, Hossam Abdelhamed<sup>2</sup>, Anuraj Sukumaran<sup>3</sup>, Aaron Kiess<sup>4</sup>, Claudia Castañeda<sup>5</sup>, Tim Boltz<sup>1</sup>, Kenneth Macklin<sup>1</sup>, Li Zhang<sup>1</sup> <sup>1</sup>*Department of Poultry Science, Mississippi State University*, <sup>2</sup>*Department of Comparative Biomedical Sciences, College Veterinary Medicine, Mississippi State University*, <sup>3</sup>*Freshpet, 146 North Commerce Way*, <sup>4</sup>*Prestage Department of Poultry Science, North Carolina State University*, <sup>5</sup>*Engrain LLC*

### **P217**

Determining whether Campylobacter can invade the avian ovum and where in the hen reproductive tract it may occur

Justin Lowery\*<sup>GS</sup>, Mary Mendoza, Christina Sigmon, Rebecca Wysocky, Aaron Kiess, Kenneth Anderson, Lin Walker *North Carolina State University*

### **P218**

Potential epigenetic effects of heat stress on ACTH response in F1 offspring of breeder Pekin ducks.

Esther Oluwagbenga\*, Victoria Tetel, Jenna Schober, Gregory Fraley *Purdue University*

### **P219**

Determination of Eggshell Translucency as a Novel Non-invasive Predictive Tool for the Hatch of Fertile Eggs in Broiler Breeders

Jinquan Wang\*<sup>1</sup>, Chongxiao Chen<sup>1</sup>, Austin Jasek<sup>2</sup>, Colwayne Morris<sup>2</sup>, Raquel Burin<sup>2</sup>, Duarte Neves<sup>2</sup> <sup>1</sup>*University of Georgia*, <sup>2</sup>*Zinpro Corporation*



## Processing and Products

### P220

Application of ultrafast gas chromatography electronic nose to characterize warmed-over flavor in chicken muscle and skin

Jacob Dees\*<sup>1UG</sup>, Linda Barahona<sup>1</sup>, Suyeong Bak<sup>2</sup>, Sungeun Cho<sup>1</sup> <sup>1</sup>*Auburn University*, <sup>2</sup>*Chunbuk National University*

### P221

Convergence Science: Merging Meat Science and Lean Six Sigma Approach to Improve Further Processing Efficiency using Burger Manufacturing as a Model Process.

Luis Guzman\*<sup>GS</sup>, Amit Morey *Auburn University*

### P222

Antimicrobial interventions effectively reduce Salmonella serovar complexity in chicken carcasses at processing

Amber Richards\*<sup>GS</sup>, Amy Sicheloff, Nikki Shariat *University of Georgia*

### P223

Application of Electron beam (eBeam) technology to reduce foodborne pathogens and spoilage organisms in ground turkey.

Tanmaie Kalapala\*<sup>1GS</sup>, Jacqueline Prince<sup>2</sup>, Jayla Andrews<sup>2</sup>, Anna Luiza Facchetti V Assumpcao<sup>1</sup>, Geetha Kumar-Phillips<sup>1</sup>, Komala Arsi<sup>2</sup>, Annie Donoghue<sup>2</sup>, Tomi Obe<sup>1</sup>, Palmy Jesudhasan<sup>2</sup>

<sup>1</sup>*UNIVERSITY OF ARKANSAS*, <sup>2</sup>*Poultry Production and Product Safety Research Unit, ARS, USDA*

### P224

Rapid flavor assessment of warmed-over deep-fried chicken and quality changes over time

Linda Barahona\*<sup>GS</sup>, Ainsley Jessup, Michelle Hayden, Sungeun Cho *Auburn University*

### P225

Comparison of egg functionality between conventional and aviary rearing systems

Skye Freeland\*<sup>1GS</sup>, Zhiyuan Wu<sup>2</sup>, Masahiko Taniguchi<sup>2</sup>, Christina Sigmon<sup>1</sup>, Aaron Kiess<sup>1</sup>, Yan Campbell<sup>1</sup> <sup>1</sup>*Prestage Department of Poultry Science, North Carolina State University*,

<sup>2</sup>*Department of Chemistry, North Carolina State University*

### P226

Evaluating the microbial ecology of a small-pastured poultry processing environment.

Eniola Betiku\*, Tolulope Tiwa Ogundipe, Tomi Obe *University of Arkansas*

### P227

Assessment of Salmonella and Campylobacter from pullet through final raw product of a conventional broiler complex

Yagya Adhikari\*<sup>1</sup>, Matthew Bailey<sup>1</sup>, Luis Munoz<sup>1</sup>, Leticia Galindo<sup>1</sup>, Pankaj Gaonkar<sup>2</sup>, Steven Kitchens<sup>2</sup>, Stuart Price<sup>2</sup>, Jeff Buhr<sup>3</sup>, Dianna Bourassa<sup>1</sup>, Kenneth Macklin<sup>4</sup> <sup>1</sup>*Department of Poultry Science, Auburn University*, <sup>2</sup>*Department of Pathobiology, Auburn University*, <sup>3</sup>*USDA ARS Poultry Microbiological Safety and Processing Research Unit*, <sup>4</sup>*Department of Poultry Science, Mississippi State University*

### P228

Peak-period egg quality traits of local and pure line laying hens housed in a non-cage housing system

Metin Petek\*, Eyuphan Petek *Bursa Uludag University*

### P229

Breast meat myopathies in local and commercial female broiler chickens

Metin Petek\*, Erdem Küpeli, Eyuphan Petek *Bursa Uludag University*

### P230

Quality characteristics of broiler breast meat affected by overlapping white striping, woody breast and spaghetti meat myopathies

Jaroslav Valenta\*<sup>1</sup>, Laura Garner<sup>1</sup>, Aftab Siddique<sup>2</sup>, Katherine Sierra<sup>1</sup>, Vianca Tashiguano<sup>1</sup>, Luis Guzman<sup>1</sup>, Telah Black<sup>1</sup>, Jacob Doster<sup>1</sup>, Payten Leeds<sup>1</sup>, Amit Morey<sup>1</sup> <sup>1</sup>*Auburn University*, <sup>2</sup>*Fort Valley State University*

**P231**

Removal of inoculated *Salmonella* KentuckyNR and *Campylobacter coli*GR from broiler carcasses using heated water (60 C) at high pressure (450 psi)

Michael McIntyre\*<sup>1</sup>, Douglas Cosby<sup>2</sup>, Latoya Wiggins<sup>2</sup>, C. Crozier<sup>2</sup>, Aaron Jordan<sup>1</sup>, Josh DeVoll<sup>1</sup>

<sup>1</sup>*Spraying Systems Company*, <sup>2</sup>*USDA, U.S. National Poultry Research Center*

**P232**

Effect of a Botanical Solution on Performance and Fecal Score in *Eimeria*-challenged Turkey Poult

Sebastian Decap<sup>1</sup>, Rosa Navarro<sup>1</sup>, Victoria Tapia\*<sup>1</sup>, Hans Konsens<sup>1</sup>, Brett Lumpkins<sup>2</sup> <sup>1</sup>*Plantae*

*Labs SpA*, <sup>2</sup>*Southern Poultry Feed and Research, Inc*

## Pathology

### P233

Profile of blood microbiota in broiler chickens with different foot pad dermatitis scores  
Janghan Choi\*<sup>1,2</sup>, Doyun Goo<sup>1</sup>, Byungwhi Kong<sup>2</sup>, Brian Bowker<sup>2</sup>, Hong Zhuang<sup>2</sup>, Woo Kim<sup>1</sup>  
<sup>1</sup>University of Georgia, <sup>2</sup>US National Poultry Research Center

### P234

Blood pictures indicate cryptic plasmacytosis can complicate a nutrition study  
Paul Cotter\* *Cotter Laboratory*

### P235

In vitro virulence characterization of avian pathogenic Escherichia coli isolates from broiler breeders with colibacillosis using HD11 cells  
Jiddu Joseph\*<sup>GS</sup>, Reshma Ramachandran, Sabin Poudel, Linan Jia, Pratima Adhikari, Li Zhang  
*Mississippi State University*

### P236

Characterisation of resistant variants of Escherichia coli exposed to essential oils mix and an antibiotic  
Nathalie Bonal\*<sup>1</sup>, Claire Carlu<sup>1</sup>, Claire Girard<sup>1</sup>, Sylvain Kerros<sup>1</sup>, Diego Garcia-Gonzalo<sup>2</sup>  
<sup>1</sup>Phyotosynthese, <sup>2</sup>Universidad de Zaragoza-CITA

### P237

Temporal Expression of Proinflammatory Cytokines in Poultry Lung Tissues Following Avian Pathogenic Escherichia coli Infection  
Xin Ye\*<sup>1</sup>, Chuan-Yu Hsu<sup>2</sup>, Linan Jia<sup>1</sup>, Xue Zhang<sup>3</sup>, Christopher Magee<sup>4</sup>, Stephanie Whitham<sup>4</sup>, Spencer Leigh<sup>4</sup>, Jeffrey Evans<sup>4</sup>, Li Zhang<sup>1</sup>, Kelsy Robinson<sup>4</sup>  
<sup>1</sup>Department of Poultry Science, Mississippi State University, <sup>2</sup>Institute for Genomic, Biocomputing, and Biotechnology, Mississippi State University, <sup>3</sup>Department of Food Science, Nutrition and Health Promotion, Mississippi State University, <sup>4</sup>Poultry Research Unit, Agriculture Research Service, United States Department of Agriculture (USDA)

### P238

High-throughput multilocus sequence typing (MLST) for a large-scale avian Escherichia coli study in Mississippi  
Linan Jia\*<sup>1</sup>, Mark Arick II<sup>2</sup>, Chuan-Yu Hsu<sup>2</sup>, Daniel Peterson<sup>2</sup>, Jeffrey Evans<sup>3</sup>, Kelsy Robinson<sup>3</sup>, Anuraj Sukumaran<sup>4</sup>, Reshma Ramachandran<sup>1</sup>, Pratima Adhikari<sup>1</sup>, Li Zhang<sup>1</sup>  
<sup>1</sup>Department of Poultry Science, Mississippi State University, <sup>2</sup>Institute for Genomics, Biocomputing, and Biotechnology, Mississippi State University, <sup>3</sup>USDA, Agriculture Research Service, Poultry Research Unit, <sup>4</sup>Freshpet

### P239

Intra-tracheal infection model to evaluate the effects of virulence genotypes of avian pathogenic Escherichia coli on layer pullets  
Fozol Ovi\*<sup>1GS</sup>, Dan Wilson<sup>2</sup>, Kelsy Robinson<sup>3</sup>, Christopher Magee<sup>3</sup>, Douglas Cosby<sup>4</sup>, Jeff Evans<sup>3</sup>, Li Zhang<sup>1</sup>, Pratima Adhikari<sup>1</sup>  
<sup>1</sup>Mississippi State University, <sup>2</sup>Wilson Veterinary Co., <sup>3</sup>Poultry Research Unit USDA, <sup>4</sup>USDA-Agriculture Research Service

### P240

Linking norepinephrine production and performance to diet-induced low-grade, chronic inflammation in the intestine of broilers  
Michael Kogut\*<sup>1</sup>, J Byrd<sup>1</sup>, Kenneth Genovese<sup>1</sup>, Haiqi He<sup>1</sup>, Christina Swaggerty<sup>1</sup>, Karrie Daniels<sup>2</sup>, Mark Lyte<sup>2</sup>  
<sup>1</sup>Southern Plains Agricultural Research Center, USDA-ARS, <sup>2</sup>College of Veterinary Medicine, Iowa State university

### P241

Transformation of Dunaliella salina by Agrobacterium tumefaciens for the Expression of the Hemagglutinin of Avian Influenza Virus H5  
Inkar Castellanos-Huerta\*<sup>1</sup>, Gabriela Gómez-Verduzco<sup>2</sup>, Guadalupe Ayora-Talavera<sup>3</sup>, Bernardo Bañuelos-Hernández<sup>4</sup>, Victor Petrone-García<sup>5</sup>, Gilberto Velázquez-Juárez<sup>6</sup>, Guillermo Tellez-Isaías<sup>1</sup>  
<sup>1</sup>Department of Poultry Science, University of Arkansas Division of Agriculture, <sup>2</sup>Departamento de Medicina y Zootecnia de Aves, Facultad de Medicina Veterinaria y Zootecnia, Universidad Nacional Autónoma de México, <sup>3</sup>Centro de Investigaciones Regionales, Dr. Hideyo

*Noguchi, Universidad Autonoma de Yucatán (UADY), <sup>4</sup>Escuela de Veterinaria, Universidad De La Salle Bajío, <sup>5</sup>Departamento de Ciencias Pecuarias, Facultad de Estudios Superiores Cuautitlán UNAM, Cuautitlán Izcalli, <sup>6</sup>Departamento de Química, Centro Universitario de Ciencias Exactas e Ingenierías, Universidad de Guadalajara*

**P242**

Efficacy (Novela Plus) a multi-strain Bacillus Subtilis and Bacillus Pumilus Probiotic via Drinking Water on Growth Performance of Broiler Chickens during Fowl Adenovirus Infection in the United Arab Emirates

Merghani Adam\* *ARABIAN FARMS DEVELOPMENT LLC*

**P243**

Prevalence of coccidiosis in Brazilian commercial poultry and its relation to non-specific enteritis according to ISI Sys, a collaborative monitoring platform for animal health.

Igor Soares\*<sup>1</sup>, Bruna Belote<sup>1</sup>, Otto Figueiró<sup>1</sup>, Elizabeth Santin<sup>2</sup> <sup>1</sup>*ISI Institute*, <sup>2</sup>*Kupono Consultancy*

**P244**

Evaluation of the Poulvac® ST vaccine given in ovo to commercial broiler chickens: hatch success, early post-hatch mortality, and antibody production

Katie Elliott\*, Jeffrey Evans, Joseph Purswell, Christopher Magee *USDA-ARS Poultry Research Unit*

**P245**

Competitive inhibition of pathogenic Enterococcus cecorum by avirulent strains

Grayson Walker\*, M Suyemoto, Chalise Brown, Matthew Browning, Luke Borst *North Carolina State University College of Veterinary Medicine Department of Population Health and Pathobiology*

**P246**

In vitro evaluation of efficacy of Bacillus amyloliquefaciens to minimize pathogens using an optical density experimental model

Shameer Rasheed\*<sup>1</sup>, Charles Hofacre<sup>2</sup>, Jennie Baxter<sup>2</sup>, John Schleifer<sup>1</sup>, Mark Lavorgna<sup>1</sup>, Mahmoud Masadeh<sup>1</sup>, Gary Reznik<sup>1</sup>, Kristy Dorton<sup>1</sup> <sup>1</sup>*Devenish Nutrition LLC*, <sup>2</sup>*The Southern Poultry Group*

## SCAD

### P247

Impact of a postbiotic containing saponin, with or without vaccination, on the mitigation of colibacillosis in broilers challenged with avian pathogenic *Escherichia coli* serotype O78 William Chaney\*<sup>1</sup>, Timothy Johnson<sup>2</sup>, Alicia Meyer<sup>1</sup>, Teresia Maina<sup>1</sup>, Vivek Kuttappan<sup>1</sup>, S. Naqvi<sup>3</sup>, Matthew Jones<sup>4</sup>, Charles Hofacre<sup>4</sup> <sup>1</sup>*Cargill Animal Nutrition, Cargill, Inc.*, <sup>2</sup>*University of Minnesota, Department of Veterinary and Biomedical Sciences*, <sup>3</sup>*Engineering and Data Sciences, Cargill, Inc.*, <sup>4</sup>*Southern Poultry Research Group, Inc.*

### P248

Antimicrobial resistance pattern of *E. coli* strains from clinically healthy chickens from one integrated company

Yosef Daniel Huberman\*<sup>1</sup>, Natalia Villarino<sup>2</sup>, Laura Méndez<sup>1</sup>, Ramón Alejandro González Pasayo<sup>1</sup> <sup>1</sup>*Animal Health Group, Instituto de Innovación para la Producción Agropecuaria y Desarrollo Sostenible (IPADS, CONICET-INTA)*, <sup>2</sup>*Phileo by Lesaffre*

### P249

Molecular screening of *E. coli* virulence-associated genes from healthy chickens from broiler production

Ramón Alejandro González Pasayo<sup>1</sup>, Natalia Villarino<sup>2</sup>, Jorgelina Lomónaco<sup>1</sup>, Yosef Daniel Huberman\*<sup>1</sup> <sup>1</sup>*Animal Health Group, Instituto de Innovación para la Producción Agropecuaria y Desarrollo Sostenible (IPADS, CONICET-INTA)*, <sup>2</sup>*Phileo by Lesaffre*

### P250

The impact of a *Bacillus*-based direct-fed microbial on growth performance and in vivo *Salmonella* dissemination in broiler chickens

Kevin Bolek\*<sup>1</sup>, Sahil Kalia<sup>2</sup>, Brooke Humphrey<sup>1</sup>, Elizabeth Bobeck<sup>2</sup> <sup>1</sup>*Phibro Animal Health Corp.*, <sup>2</sup>*Iowa State University*

### P251

Characterization of the *Salmonella enterica* serovar Kentucky Type III Secretion System SPI-2 Secretome

Jill Skrobarczyk\*<sup>1</sup>, Lindsey Wythe<sup>1</sup>, Yuhua Farnell<sup>1</sup>, Michael Kogut<sup>2</sup>, Kenneth Genovese<sup>2</sup>, Morgan Farnell<sup>1</sup> <sup>1</sup>*Department of Poultry Science, Texas A&M Agrilife Research*, <sup>2</sup>*Agricultural Research Service, United States Department of Agriculture*

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Deep serotyping highlights *Salmonella* surveillance challenges in turkey production

Emily Cason\*<sup>1GS</sup>, Anna Carlson<sup>2</sup>, Nikki Shariat<sup>1</sup> <sup>1</sup>*Department of Population Health, University of Georgia*, <sup>2</sup>*Cargill Inc.*

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Reevaluating ceca as the gold standard for *Salmonella* surveillance in ground turkey

Emily Cason\*<sup>1</sup>, Grace Bannister<sup>2</sup>, Marvin Tzirin<sup>2</sup>, Allen Byrd<sup>3</sup>, Anna Carlson<sup>4</sup>, Nikki Shariat<sup>1</sup>, Jessie Vipham<sup>2</sup> <sup>1</sup>*Department of Population Health, University of Georgia*, <sup>2</sup>*Department of Animal Science and Industry, Kansas State University*, <sup>3</sup>*USDA-ARS Southern Plains Agricultural Center*, <sup>4</sup>*Cargill Inc.*

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Assessment of environmental sampling for determining *Salmonella* prevalence and load in broiler houses

Marco Reina\*<sup>GS</sup>, Emily Cason, David Ayala-Velasteguí, Nikki Shariat *University of Georgia*

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Investigation of the immune responses of *Salmonella* Enteritidis challenged broiler chickens fed a dietary yeast fermentate

Allison Milby-Blackledge\*<sup>1GS</sup>, Yuhua Farnell<sup>1</sup>, Audrey McElroy<sup>1</sup>, Christi Swaggerty<sup>2</sup>, Leticia Pacheco<sup>3</sup>, Robson Barducci<sup>3</sup>, Anderson Santos<sup>3</sup>, Joao Koch<sup>3</sup>, Thaila Putarov<sup>3</sup>, Morgan Farnell<sup>1</sup> <sup>1</sup>*Department of Poultry Science, Texas A&M AgriLife Research*, <sup>2</sup>*United States Department of Agriculture, Southern Plains Agricultural Research Center*, <sup>3</sup>*Biorigin Brazil*

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Core genome-based phylogeny of Salmonella isolated from various stages of No-Antibiotics-Ever (NAE) broiler complex

Yagya Adhikari\*<sup>1GS</sup>, Matthew Bailey<sup>1</sup>, James Krehling<sup>2</sup>, Luis Munoz<sup>1</sup>, Pankaj Gaonkar<sup>2</sup>, Steven Kitchens<sup>2</sup>, Stuart Price<sup>2</sup>, Jeff Buhr<sup>3</sup>, Dianna Bourassa<sup>1</sup>, Kenneth Macklin<sup>4</sup> <sup>1</sup>*Department of Poultry Science, Auburn University*, <sup>2</sup>*Department of Pathobiology, Auburn University*, <sup>3</sup>*USDA ARS Poultry Microbiological Safety and Processing Research Unit*, <sup>4</sup>*Department of Poultry Science, Mississippi State University*

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Effect of diet glucose oxidase and Bacillus-DFM on vaccination against S. Enteritidis in broiler chickens

Rubén Merino-Guzmán\*<sup>1</sup>, G. Madeleine Cardoso-Luna<sup>1</sup>, Juan Latorre<sup>2</sup>, Roberto Señas-Cuesta<sup>2</sup>, Billy Hargis<sup>2</sup>, Guillermo Téllez-Isaiás<sup>2</sup> <sup>1</sup>*Departamento de Medicina y Zootecnia de Aves, Facultad de Medicina Veterinaria y Zootecnia, UNAM*, <sup>2</sup>*Department of Poultry Science, University of Arkansas*

**P258**

Assessment of the effects of feed sanitizer Finio and organic acid Fortrol on S. typhimurium contamination in soybean meal, canola meal, and meat and bone meal

Callie Selby\*, Enrique Montiel, Cheryl Shaffer, Nicole Holcombe, Jason Sands, Jose Ramirez *Anitox Corporation*

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Longitudinal Salmonella surveillance in broiler breeder flocks

Amy Sicheloff\*<sup>1GS</sup>, Sean Nolan<sup>2</sup>, Nikki Shariat<sup>1</sup> <sup>1</sup>*Poultry Diagnostic and Research Center, University of Georgia*, <sup>2</sup>*Nolan Integrated Pest Control and Management (NIPCAM) Group*

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Evaluation of acetylsalicylate acid in turkeys infected with coccidia

Aaliyah Gore\*<sup>GS</sup>, Rocio Crespo *North Carolina State University*

**P261**

Chicken cecal enteroids as a model for studying Eimeria tenella development and host-parasite interaction

Bingqi Dong\*<sup>GS</sup>, Alberta Fuller, Rami Dalloul *University of Georgia*

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In ovo administration of a postbiotic regulates the differential expression of key intestinal genes in broilers during subclinical necrotic enteritis

Bingqi Dong\*, Rami Dalloul *University of Georgia*

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Phytogetic blends elicit positive effects on broiler immune response during a necrotic enteritis challenge model

Candice Blue\*<sup>1</sup>, Ashley Wagner<sup>2</sup>, Bertrand Médina<sup>2</sup>, Ivan Girard<sup>2</sup>, Rami Dalloul<sup>1</sup> <sup>1</sup>*University of Georgia*, <sup>2</sup>*Probiotech International Inc.*

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Immunization of broiler chickens with CpG-Oligonucleotide Recombinant HVT--Laryngotracheitis in ovo Vaccine confers protection against a viral challenge

Carissa Gaghan\*<sup>1GS</sup>, Matthew Browning<sup>1</sup>, Abdelhamid Fares<sup>1</sup>, Mohamed Abdul-Careem<sup>2</sup>, Isabel Gimeno<sup>1</sup>, Raveendra Kulkarni<sup>1</sup> <sup>1</sup>*North Carolina State University*, <sup>2</sup>*University of Calgary*

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Study investigating the interaction of IBDV (AL2) and IBV (DMV/1639) challenges in commercial broilers based on infectious bronchitis vaccination status

Kalen Cookson\*, John Dickson, Jon Schaeffer *Zoetis*

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Evaluation of Feed Sanitation using feed sanitizers Termin-8 and Finio on the control of Necrotic Enteritis in Broiler Chickens

Cheryl Shaffer<sup>1</sup>, Dan Moore<sup>2</sup>, Enrique Montiel<sup>1</sup>, Nicole Holcombe<sup>1</sup>, Callie Selby\*<sup>1</sup> <sup>1</sup>*Anitox Corporation*, <sup>2</sup>*Colorado Quality Research*

**P267**

Screening dusts for potential activity against Litter Beetles

Carla Guardado\*<sup>1GS</sup>, Ruediger Hauck<sup>1,2</sup>, Kenneth Macklin<sup>3</sup>, Arthur Appel<sup>4</sup> <sup>1</sup>*Department of Poultry Science, Auburn University*, <sup>2</sup>*Department of Pathobiology, Auburn University*, <sup>3</sup>*Department of Poultry Science, Mississippi State University*, <sup>4</sup>*Department of Entomology and Plant Pathology, Auburn University*

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Assessment of Two *Enterococcus cecorum* Challenge Strains when administered after a Respiratory Vaccine in Broiler Chickens

Matthew Jones\*<sup>1</sup>, Charles Hofacre<sup>1</sup>, Jennie Baxter<sup>1</sup>, M. Suyemoto<sup>2</sup>, Enid McKinley<sup>3</sup>, Jodi Delago<sup>3</sup>, Alexandra Smith<sup>3</sup> <sup>1</sup>*Southern Poultry Research Group*, <sup>2</sup>*Department of Population Health and Pathobiology, College of Veterinary Medicine, North Carolina State University*, <sup>3</sup>*Arm and Hammer Animal Nutrition and Food Production*

**P269**

A comparison of direct-fed microbials containing multiple or single *Bacillus* strains on the performance and health of broiler chickens exposed to a mixed disease challenge model

Saheed Osho\*<sup>1</sup>, Kevin Bolek<sup>1</sup>, James McNaughton<sup>2</sup>, Kari Saddoris-Clemons<sup>1</sup>, Brooke Humphrey<sup>1</sup>, Miriam Garcia-Orellana<sup>1</sup> <sup>1</sup>*Phibro Animal Health Corporations*, <sup>2</sup>*AH Pharma*

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### **P270**

Automatic detection and scoring of footpad dermatitis in poultry utilizing YOLOv8-FPD models  
Ramesh Bist\*<sup>1GS</sup>, Xiao Yang<sup>1</sup>, Sachin Subedi<sup>1</sup>, Bidur Paneru<sup>1</sup>, Keshav Bist<sup>2</sup>, Lilong Chai<sup>1</sup>

<sup>1</sup>*Department of Poultry Science, College of Agricultural & Environmental Science, University of Georgia*, <sup>2</sup>*Department of Electronics and Computer Engineering, Institute of Engineering, Tribhuvan University*

### **P271**

Tracking dustbathing behavior of cage-free laying hens with machine vision technologies  
Bidur Paneru\*<sup>GS</sup>, Ramesh Bist, Xiao Yang, Sachin Subedi, Lilong Chai *University of Georgia*

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Tailoring feed strategies: A study on breeder pullet behavior with modified diets and probiotic supplements

Mazette Croom\*<sup>1GS</sup>, Courtney Daigle<sup>2</sup>, Rosemary Walzem<sup>1</sup> <sup>1</sup>*Poultry Science Department, Texas A&M University*, <sup>2</sup>*Animal Science Department, Texas A&M University*

### **P273**

Comparison of traditional LED lighting program with a Dynamic lighting program on broiler stress, fear, health and growth

Parker Watson\*<sup>1GS</sup>, Gabrielle House<sup>2</sup>, Aaron Stephan<sup>2</sup>, Gregory Archer<sup>1</sup> <sup>1</sup>*Texas A&M Agrilife Extension*, <sup>2</sup>*Once by Signify*

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Impact of perch provision timing on musculoskeletal health of laying hens

Shaunie Cruz\*<sup>UG</sup>, Mallory Anderson, Alexa Johnson, Mireille Arguelles-Ramos, Ahmed Ali *Clemson University*

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Effect of late chick placement on growth performance, relative organ weights, and breast muscle of broiler chickens raised to 21 days of age

Jordan Smith\*<sup>UG</sup>, Oscar Tejada *Southern Arkansas University*

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Comparison between farm hatching and traditional hatching on post-hatch growth performance of broilers raised to 17 days of age

Grace Rutherford\*<sup>UG</sup>, Mallory Landreth, Hannah Walters, Oscar Tejada *Southern Arkansas University*

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Vocalizations as a flock welfare indicator in the poultry industry.

Gregory Fraley, Jenna Schober\*, Jeffrey Lucas, Tze Yao Yap, MacKenzie Ulrey, Jill Merritt *Purdue University*

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When is a peep a fear peep? Characterization of chicken vocalizations during an isolation fear test.

Gregory Fraley<sup>1</sup>, Jeffrey Lucas<sup>1</sup>, Jenna Schober\*<sup>1</sup>, MacKenzie Ulrey<sup>1</sup>, Anne Troyer<sup>1</sup>, Karen Christensen<sup>2</sup> <sup>1</sup>*Purdue University*, <sup>2</sup>*Tyson Foods*

### **P279**

Preening cups in duck pens are associated with an increase in central dopamine and decrease in serotonin activity indicative of increased aggression

Melanie Bergman\*<sup>1</sup>, Jenna Schober<sup>1</sup>, Drew Frey<sup>2</sup>, Heidi Parnin<sup>2</sup>, Gregory Fraley<sup>1</sup> <sup>1</sup>*Animal Sciences, Purdue University*, <sup>2</sup>*Culver Duck Farms, Inc.*

### **P280**

Assessing behavior of three Naked Neck genotypes reared under different production systems

Arif Hameed\*<sup>1</sup>, Shahid Mehmood<sup>1</sup>, Sohail Ahmad<sup>1</sup>, Arshad Javid<sup>2</sup> <sup>1</sup>*Department of Poultry Production, Faculty of Animal Production and Technology, University of Veterinary and Animal Sciences, Lahore, Pakistan*, <sup>2</sup>*Department of Wildlife and Ecology, Faculty of Fisheries and Wildlife, University of Veterinary and Animal Sciences, Lahore, Pakistan*



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Effect of stocking density on production performance of Ross 708 and Cobb 700 broilers  
Shengyu Zhou\*, Yang Zhao, Tanner Thornton, Mustafa Jaihuni *University of Tennessee, Knoxville*

**P282**

Reducing pecking in debeaked hens  
Jean-Francois Gabarrou\* *Laboratoire Phodé*

**P283**

Effect of cocoa bean shell (*Theobroma cacao*) as partial replacement for maize on growth performance and haematological indices of broiler chicken  
Rasheed Hamzat\*<sup>1</sup>, Alagbe John<sup>2,1</sup> *Department of Animal Nutrition and Biochemistry, Sumitra Research Institute Gujarat India, <sup>2</sup>Department of Animal Science, University of Abuja Nigeria*

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Evaluating the EEG of broilers in response to VSD plus Heat with humidity injected to accelerate depopulation methodologies  
Kari Harding<sup>1</sup>, Ramon Malheiros<sup>1</sup>, Sanjay Shah<sup>2</sup>, Kenneth ANDERSON\*<sup>1</sup> *Prestage, Dept. of Poultry Sci., North Carolina State University, <sup>2</sup>Dept. of Bio and Ag Engineering, North Carolina State University*

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Litter consumption of broiler chickens raised in either floor pens or battery cages during the starter period  
Stephanie Whitham\*, Christopher Magee, Joseph Purswell *USDA-ARS Poultry Research Unit*

**P286**

Effect of feeder area distribution on broiler performance to 56 days  
Joseph Purswell\*<sup>1</sup>, Hammed Olanrewaju<sup>1</sup>, Yang Zhao<sup>2,1</sup> *USDA-ARS Poultry Research Unit, <sup>2</sup>University of Tennessee*

**P287**

Using a transect approach to assess behavior and welfare of laying hens in aviary tiers during peak lay  
Metin Petek\*<sup>1,2</sup>, Janice Siegford<sup>2,1</sup> *Bursa Uludag University, Faculty of Veterinary Medicine, Department of Animal Science, <sup>2</sup>Michigan State University, Department of Animal Science*

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Sprinkler cooling broilers and performance  
Jonathan Moon\*<sup>1</sup>, Jessica Drewry<sup>1</sup>, J. Purswell<sup>2</sup>, Tom Tabler<sup>3</sup>, Yi Liang<sup>4,1</sup> *Mississippi State University, <sup>2</sup>USDA-ARS Poultry Research Unit, <sup>3</sup>University of Tennessee, <sup>4</sup>University of Arkansas*

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Biomapping of a commercial poultry hatchery in the Southeastern United States

Walid Al Hakeem\*<sup>1</sup>, Benjamin Zwirzitz<sup>2</sup>, Xiang Li<sup>3</sup>, Ade Oladeinde<sup>3</sup>, Michael Rothrock Jr<sup>3</sup> <sup>1</sup>*Oak Ridge Institute for Science and Education, Athens, Georgia, United States*, <sup>2</sup>*Institute of Food Science, University of Natural Resources and Life Sciences, Vienna, Austria*, <sup>3</sup>*USDA-ARS, USNPRC-EPPSRU, Athens, Georgia, United States*

### **P290**

Impacts of on-farm water sanitation practices on microbial hygiene in poultry waterlines and efficacy of sodium hypochlorite-based product on foodborne pathogens.

Rabin Raut\*<sup>1GS</sup>, Agnes Kilonzo-Nthenge<sup>1</sup>, Susan Watkins<sup>2</sup>, Pramir Maharjan<sup>1</sup> <sup>1</sup>*Tennessee State University*, <sup>2</sup>*University of Arkansas*

### **P291**

Title: Patterns of perch use in relation to body weight in two strains of broiler.

CHIOMA AKUKWU\*<sup>GS</sup>, CIRENIO HISASAGA, MAJA MAKAGON *Center for Animal Welfare, Department of Animal Science, University of California.*

### **P292**

Assessing activity of broilers in a commercial house using laser enrichments

Reyna Mero\*<sup>UG</sup>, Katy Tarrant *California state University, Fresno*

### **P293**

Comparing surface temperatures of different broiler platform designs

Brenda Hernandez Tapia\*, Monica Franco, Katy Tarrant *California State University, Fresno*

### **P294**

Machine learning algorithms predict *Listeria* prevalence and *Campylobacter* species on pastured poultry farms based on management practices and farm environment variables.

Xiang Li\*, Michael Rothrock, Adelumola Oladeinde *USDA USNPRC EPPSRU*

### **P295**

Comparison of metagenomic sequencing methods using *Salmonella* Heidelberg infected broilers.

Xiang Li\*, Adelumola Oladeinde, Michael Rothrock *USDA USNPCR EPPSRU*

### **P296**

Comparison effects of natural and artificial lighting on growth performance and carcass characteristics of broilers grown to 56 days of age.

CHRISTOPHER MAGEE<sup>1</sup>, Stephanie Collier<sup>1</sup>, John Linhoss<sup>2</sup>, Bethany Baker-Cook<sup>2</sup>, Stephanie Whitham<sup>1</sup>, Joseph Purswell<sup>1</sup>, HAMMED OLANREWAJU\*<sup>1</sup> <sup>1</sup>*USDA-ARS*, <sup>2</sup>*Auburn University*

## Metabolism and Nutrition: Enzymes

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THE USE OF FIBRE-DEGRADING ENZYME SUPPLEMENTATION IN CORN COB-BASED DIETS FOR BROILERS: EFFECTS ON GROWTH PERFORMANCE, AND CARCASS TRAITS

Frank Idan\*<sup>1,2</sup>, Alberta Mante<sup>3</sup> <sup>1</sup>*Kwame Nkrumah University of Science and Technology*, <sup>2</sup>*Kansas State University*, <sup>3</sup>*University of Ghana*

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Evaluation of multi-carbohydrase enzyme complex and phytase dietary supplementation on Pekin duck performance and carcass traits

Hector Leyva-Jimenez\*<sup>1</sup>, Melinda Grimes<sup>2</sup>, Jessica Rocha<sup>2</sup>, Gregory Archer<sup>2</sup>, Carlos Soto<sup>1</sup>, Yemi Burden<sup>1</sup>, Brian Dirks<sup>1</sup> <sup>1</sup>*United Animal Health Inc.*, <sup>2</sup>*Texas A&M University*

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

Omar Al-Qudah, Kamel Mahmoud\*, Basheer Nusairat *Jordan University of Science & Technology*

### P300

In vitro evidence of synergistic effect of proteases and amylases on starch degradation

Jacqueline de Souza\*<sup>1</sup>, Rafael Alves<sup>1</sup>, Diogo Rosso<sup>2</sup>, Eduardo Della Pia<sup>2</sup>, Vitor Fascina<sup>3</sup>  
<sup>1</sup>*Novozymes Latin America Ltda*, <sup>2</sup>*Novozymes A/S*, <sup>3</sup>*dsm-firmenich Brasil*

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The effect of Zymiotics® supplementation in Commercial feed on laying hens performance and table-egg quantitative and qualitative parameters

Lucio Araujo\*<sup>1</sup>, Rasha Qudsieh<sup>2</sup>, Sudhir Yadav<sup>2</sup>, Sandra Rodrigues<sup>2</sup>, Yun-mei Lin<sup>2</sup>, Douglas Faria<sup>1</sup>, Isabela Silva<sup>1</sup>, Raimundo Netto<sup>1</sup>, Vitor Pais<sup>1</sup>, Cristiane Araujo<sup>1,3</sup> <sup>1</sup>*University of Sao Paulo - Faculty of Animal Science and Food Engineering*, <sup>2</sup>*BioResource International*, <sup>3</sup>*University of Sao Paulo, School of Veterinary Medicine and Animal Science*

### P302

Effects of dietary enzyme supplementation on the performance and nutrient digestibility of turkey poults fed a low nutrient diet.

Brendan Heinichen\*<sup>GS</sup>, Peter Ferket, Ramon Malheiros, Jesse Grimes, Tuoying Ao *Prestage Department of Poultry Science, North Carolina State University*

### P303

Evaluation of a new generation of phytase genetically engineered for greater thermotolerance and pH tolerance in broilers

Coleman Hatmaker\*<sup>GS</sup>, Thomas Jones, Reed Dillard, Adam Davis *University of Georgia*

### P304

Myo-inositol and phytase supplementation to low protein diets differentially influence growth performance and nutrient digestibility in broiler chickens

Tobi Ogunribido\*<sup>1GS</sup>, Abiola Lawal<sup>1</sup>, Mike Bedford<sup>2</sup>, Olayiwola Adeola<sup>1</sup>, Kolapo Ajuwon<sup>1</sup>  
<sup>1</sup>*Department of Animal Science, Purdue University*, <sup>2</sup>*AB Vista - A division of Ab Agri Ltd, Marlborough*,

### P305

Evaluation of supplementing a multi-carbohydrase enzyme complex to Pekin duck diets on growth performance, and carcass traits

Melinda Grimes\*<sup>1GS</sup>, Jessica Rocha<sup>1</sup>, Hector Leyva-Jimenez<sup>2</sup>, Yemi Burden<sup>2</sup>, Carlos Soto<sup>2</sup>, Brian Dirks<sup>2</sup>, Gregory Archer<sup>1</sup> <sup>1</sup>*Texas A&M Agrilife Extension*, <sup>2</sup>*United Animal Health*

### P306

Effect of a commercial xylanase supplementation on top of phytase on digesta viscosity, growth performance, and carcass yield in broilers fed a complex diet

M. Grimes\*<sup>1</sup>, A. Bello<sup>2</sup>, E. Vinyeta Puntir<sup>3</sup>, Y. Dersjant-Li<sup>3</sup>, G.S. Archer<sup>1</sup> <sup>1</sup>*Department of Poultry Science, Texas A&M*, <sup>2</sup>*Danisco Animal Nutrition & Health, IFF, Wilmington, 19803, Delaware*, <sup>3</sup>*Danisco Animal Nutrition & Health, IFF, 2342 BH Oegstgeest, The Netherlands*

## Metabolism and Nutrition: Amino Acids

### P307

Effects of a coccidiosis challenge on dietary methionine recommendations in broilers

Julianna Jespersen\*<sup>1GS</sup>, Juliano de Paula Dorigam<sup>2</sup>, Kaitlyn Sommer<sup>1</sup>, Cameron White<sup>1</sup>, Laney Froebel<sup>1</sup>, Bailey Harsh<sup>1</sup>, Ryan Dilger<sup>1</sup> <sup>1</sup>University of Illinois, <sup>2</sup>Evonik Operations GmbH, Nutrition & Care

### P308

Effect of arginine supplementation on the production, intestinal health, and immune response of broilers during necrotic enteritis challenge

Shahna Fathima\*<sup>1GS</sup>, Walid Ghazi Al Hakeem<sup>1</sup>, Revathi Shanmugasundaram<sup>2</sup>, Ramesh Selvaraj<sup>1</sup> <sup>1</sup>University of Georgia, <sup>2</sup>Toxicology and Mycotoxin Research Unit, US National Poultry Research Center

### P309

Methionine supplementation in reduced protein diets altered bone quality of broilers under coccidia challenge assessed by DEXA and Micro-CT scanning.

Guanchen Liu\*<sup>GS</sup>, Venkata Choppa, Milan Sharma, Yuguo Tompkins, Woo Kim Department of Poultry Science, University of Georgia

### P310

The dietary supplementation of L-arginine alleviates the adverse effects of coccidiosis in laying hens infected with mixed Eimeria species

Milan Sharma\*<sup>1GS</sup>, Robert Gogal<sup>2</sup>, Prafulla Regmi<sup>1</sup>, Lilong Chai<sup>1</sup>, Todd Applegate<sup>1</sup>, Woo Kim<sup>1</sup> <sup>1</sup>Department of Poultry Science, University of Georgia, <sup>2</sup>Department of Biosciences and Diagnostic Imaging, College of Veterinary Medicine, University of Georgia

### P311

Pellet die thickness and the use of a throughput agent interacted to demonstrate that high frictional heat increased apparent ileal amino acid digestibility but did not influence trypsin inhibitor activity or male broiler performance

Lucas Knarr\*<sup>1</sup>, Kristina Bowen<sup>1</sup>, Jon Ferrel<sup>2</sup>, Sunhyung Kim<sup>3</sup>, Hari Krishnan<sup>4</sup>, Joseph Moritz<sup>1</sup> <sup>1</sup>West Virginia University, <sup>2</sup>Azomite Mineral Products, <sup>3</sup>University of Missouri, <sup>4</sup>USDA Agricultural Research Service

### P312

Effects of graded levels of methionine on growth performance and digestive tract characteristics

Kaitlyn Sommer\*<sup>1</sup>, Maci Oelschlager<sup>1</sup>, Juliano de Paula Dorigam<sup>2</sup>, Rose Whelan<sup>2</sup>, Julianna Jespersen<sup>1</sup>, Laney Froebel<sup>1</sup>, Ryan Dilger<sup>1</sup> <sup>1</sup>University of Illinois - Urbana Champaign, <sup>2</sup>Evonik Nutrition & Care GmbH

### P313

Dietary arginine responses of Cobb 500 broilers reared under cyclic elevated temperatures.

Annalise Anderson\*<sup>1</sup>, Jason Lee<sup>2</sup>, Roshan Adhikari<sup>2</sup>, Samuel Rochell<sup>1</sup> <sup>1</sup>Department of Poultry Science, Auburn University, <sup>2</sup>CJ America, Inc.

### P314

Effect of supplementation of DigeGrain Pro-6; a novel protease on performance, gut health and expression of growth-related genes in broiler chickens

Utsav Tiwari\*, Dipak Roda Enzyme Innovation

### P315

A determination of standardized ileal digestible lysine requirement of Arbor Acres broiler in the pre-starter phase from 0 to 10 days

Thanaphat Siriphongsathat\*<sup>1</sup>, Ratchasak Thommasaroch<sup>1</sup>, Apidech Buangam<sup>1</sup>, Suthasinee Udhachon<sup>1</sup>, Nisaphat Wuttipasi<sup>1</sup>, Kanitnat Taraka<sup>1</sup>, J Pimpech<sup>1</sup>, Patrapan Rungcharoen<sup>1</sup>, Nickki Tillman<sup>2</sup>, Roselina Angel<sup>3</sup> <sup>1</sup>Thaifoods Group Public Company Limited, <sup>2</sup>Nutritional Statistics LLC, <sup>3</sup>Department of Animal and Avian Sciences, University of Maryland

## **Metabolism and Nutrition: Vitamins and Minerals**

### **P316**

Effects of different dietary sources and levels of zinc on bone mineralization and mineral digestibility of broiler chickens

Mohammad Pilevar\*, Oluyinka Olukosi *Department of Poultry Science, University of Georgia*

### **P317**

A comparison of two methodological approaches for evaluating the effect of vitamin A supplementation in broiler chickens

Pinar Sacakli<sup>1</sup>, Muhammad Shazaib Ramay<sup>1</sup>, Josoa Andre Harijaona<sup>1</sup>, Yauheni Shastak<sup>2</sup>, Wolf Pelletier<sup>2</sup>, Alvaro Gordillo<sup>3</sup>, Kevin Matter\*<sup>4</sup>, Ali Calik<sup>1</sup> <sup>1</sup>*Ankara University*, <sup>2</sup>*BASF SE*, <sup>3</sup>*BASF Espanola S.L.*, <sup>4</sup>*BASF Corp.*

### **P318**

Improvement of Zinc absorption and productive performance in Broilers through the supplementation of Glycinate of Zn (Glymet 40%). Organic vs inorganic sources.

Javier López-Paredes\*<sup>1</sup>, Monica Puyalto<sup>1</sup>, Karan Singh<sup>1</sup>, Dayaram Suryawanshi<sup>2</sup>, Juan Jose Mallo<sup>1</sup> <sup>1</sup>*NOREL SA*, <sup>2</sup>*OMEGA LABORATORIES*

### **P319**

The supplementation with Glycinate of Zn (Glymet 40) improves the intestinal development, the immunological status and reduces the generation of free radical in Broilers.

Javier López-Paredes\*<sup>1</sup>, Monica Puyalto<sup>1</sup>, Karan Singh<sup>1</sup>, Dayaram Suryawanshi<sup>2</sup>, Juan Jose Mallo<sup>1</sup> <sup>1</sup>*NOREL SA*, <sup>2</sup>*Omega Laboratories*

### **P320**

Evaluation of Zn, Cu and Mn Methionine-Hydroxy-Analogue Chelate associated with Benzoic acid and essential oils on performance, incidence of footpad lesions and carcass quality in broilers

Liris Kindlein\*<sup>1</sup>, Tainá Simonetti<sup>1</sup>, André Favero<sup>2</sup>, Sergio Vieira<sup>1</sup>, Kelen Zavarize<sup>3</sup>, Alessandro Lima<sup>3</sup>, Gabriela Cardoso<sup>3</sup>, David Torres<sup>3</sup> <sup>1</sup>*UFRGS*, <sup>2</sup>*Santa Livia Farm*, <sup>3</sup>*Novus do Brasil*

### **P321**

Systematic review of composition of laying hen vitamin-mineral premixes used in the literature during the last 15 years

AHMET PEKEL\* *Department of Animal Nutrition and Nutritional Diseases, Faculty of Veterinary Medicine, Istanbul University-Cerrahpaşa, 34320*

## Metabolism and Nutrition: General Nutrition

### P322

Evaluation of the adaptation in the novel methodology to determine internal particle size of pellets

Urias Castillo\*<sup>UG</sup>, Eva Guzman, Cristina Simões, Isadora Pegoraro, Beatriz Onishi, Erasmo Flores, Jose Vargas, Jose Hernandez, Joseph Gulizia, Leticia Orellana, Wilmer Pacheco  
*Department of Poultry Science, Auburn University*

### P323

Influence of conditioning temperature and retention time on pellet quality of corn soybean meal-based diets

Eva Guzman Guzman\*<sup>GS</sup>, Beatriz Onishi, Cristina Simões, Erasmo Flores, Isadora Pegoraro, Jose Vargas, Jose Hernandez, Joseph Gulizia, Leticia Orellana, Urias Castillo, Wilmer Pacheco  
*Department of Poultry Science, Auburn University*

### P324

In vitro Dose-Response Effects of Fumonisin B1 and Deoxynivalenol on the HD-11 Macrophage Cell Line Following Lipopolysaccharide Challenge

Laharika Kappari\*<sup>IGS</sup>, Passion Locklear<sup>2</sup>, Joseph Dasireddy<sup>1</sup>, Todd Applegate<sup>1</sup>, Revathi Shanmugasundaram<sup>3</sup>  
<sup>1</sup>*University of Georgia*, <sup>2</sup>*University of North Carolina at Pembroke*,  
<sup>3</sup>*Toxicology and Mycotoxin Research Unit, USDA*

### P325

Modeling of thermal inactivation of avian pathogenic Escherichia coli, E. coli O157:H7 and non-pathogenic E. coli in poultry feeds using a lab-based circulating water bath

Michael Carroll\*<sup>IGS</sup>, Cassidy Morris<sup>1</sup>, Charis Waters<sup>1</sup>, Pratima Adhikari<sup>1</sup>, Kelley Wamsley<sup>1</sup>, Cangliang Shen<sup>2</sup>, Timothy Boltz<sup>1</sup>  
<sup>1</sup>*Mississippi State University*, <sup>2</sup>*West Virginia University*

### P326

Comparison of the nutritional value of soybean meal from five origins.

Thiago Yabuta\*<sup>1</sup>, Joaquín Cabanas-Ojeda<sup>1</sup>, Nicolas Mejía-Abaunza<sup>1,2</sup>, Paula Lozano-Cruz<sup>1,2</sup>, Valmiro Aragão-Netto<sup>1</sup>, Edgar Oviedo-Rondón<sup>1</sup>  
<sup>1</sup>*Prestage Department of Poultry Science, North Carolina State University*, <sup>2</sup>*College of Veterinary Medicine and Zootecnia, Universidad del Tolima, Colombia*

### P327

Characterization, processing, and nutrition performance of dry extruded full-fat soybean meals from six different states in the U.S.

ABDULLAH SCOTT\*<sup>1</sup>, Cole Umberson<sup>1</sup>, Callie Selby<sup>1</sup>, Jordan Weil<sup>1</sup>, Nawin Suesuttajet<sup>1</sup>, Ehsan Sheikhsamani<sup>1</sup>, Diego Martinez<sup>1</sup>, Mian Riaz<sup>2</sup>, Craig Coon<sup>1</sup>  
<sup>1</sup>*University of Arkansas*, <sup>2</sup>*Texas A&M University, College station*

### P328

Understanding amino acid digestibility of locally (Tennessee) grown soybean cultivars for Broiler chickens, in vitro study

Alexis McDade\*<sup>1</sup>, Virginia Sykes<sup>2</sup>, Ali Taheri<sup>1</sup>, Pramir Maharaja<sup>1</sup>  
<sup>1</sup>*Tennessee State University*, <sup>2</sup>*Univeristy of Tennessee*

### P329

Microbial dynamics in sorghum-based diets: impact of phase feeding and phytase superdosing vs. corn-based diets

Santiago Sasía\*<sup>1</sup>, Elio Ortiz<sup>1</sup>, Manuel Peña<sup>1</sup>, Brett Lumpkins<sup>2</sup>, Mireille Arguelles-Ramos<sup>1</sup>  
<sup>1</sup>*Clemson University*, <sup>2</sup>*Southern Poultry Feed and Research, Inc.*

### P330

Dietary inclusion of Micelle Silymarin in Hy-Line brown laying hens ameliorates production performance, egg quality, and blood profile parameters.

Sungbo Cho\*, Sharif Uddin Khan, In Ho Kim  
*Dankook University, Department of Animal Resource and Science*

**P331**

Optimizing Protein Sources in Reduced-Protein Diets to Improve the Immune Responses During Coccidiosis in Broiler Chickens

Revathi Shanmugasundaram\*<sup>1</sup>, Adeleye Ajao<sup>2</sup>, Shana Fathima<sup>2</sup>, Adelumola Oladeinde<sup>3</sup>, Ramesh Selvaraj<sup>2</sup>, Todd Applegate<sup>2</sup>, Oluyinka Olukosi<sup>2</sup> <sup>1</sup>*Toxicology and Mycotoxin Research Unit, USDA-ARS, US National Poultry Research Center, Agricultural Research Service,* <sup>2</sup>*Department of Poultry Science, University of Georgia,* <sup>3</sup>*Egg and Poultry Production Safety Research Unit, USDA-ARS, US National Poultry Research Center, Agricultural Research Service*

**P332**

Efficacy of hydrophilic and lipophilic clays against fumonisins in day old broilers chickens

Carlos Mallmann\*<sup>1</sup>, Leandro Giacomini<sup>2</sup>, Diego Sturza<sup>2</sup>, Manuel Contreras<sup>1,2,3</sup> <sup>1</sup>*Federal University of Santa Maria, Laboratório de Análises Micotoxicológicas (LAMIC), Santa Maria, RS, Brazil,* <sup>2</sup>*Laboratório de Soluções Analíticas, Microbiológicas e Tecnológicas (SAMITEC),* <sup>3</sup>*Special Nutrients/Agrimprove*

**P333**

Changes in biological pathways of the liver and jejunum of broiler chickens associated with intestinal histology

Luis Romero\*<sup>1</sup>, Laura Payling<sup>1</sup>, Rami Dalloul<sup>2</sup> <sup>1</sup>*Biofractal Lda.,* <sup>2</sup>*University of Georgia*

**P334**

Trends in mycotoxin contamination in 2023 United States corn

Chasity Pender\*, Paige Gott, Shelby Corray *DSM Nutritional Products*

**P335**

Productive energy (Arkansas Net Energy) value of diet and soybean meal for broilers as predicted by digestible nutrients

Diego Martinez\*, Nawin Suesuttajit, Cole Umberson, Craig Coon *University of Arkansas*

**P336**

Productive energy: Exploring reasons for its superiority beyond apparent metabolizable energy and classic net energy

Diego Martinez\*, Nawin Suesuttajit, Cole Umberson, Craig Coon *University of Arkansas*

## Metabolism and Nutrition: Feed Additives

### P337

Effect of dietary Moringa oleifera supplementation in ameliorating coccidial burden in broiler chickens

Neketa Hughes\*<sup>1UG</sup>, Randy Domer<sup>1</sup>, Colwayne Morris<sup>2</sup> <sup>1</sup>University of Guyana, <sup>2</sup>Zinpro Corporation

### P338

The effect of dietary essential oil of oregano on the lipid stability and fatty acid profile of eggs stored at room temperature.

Ari Bragg\*<sup>1UG</sup>, Alexa Johnson<sup>1</sup>, Jose Charre-Perales<sup>1</sup>, Allie Todd<sup>2</sup>, Ahmed Ali<sup>1</sup> <sup>1</sup>Clemson University, <sup>2</sup>University of South Carolina

### P339

Effect of dietary betaine supplementation and post hatch delayed access to feed and water on performance, digestion of nutrients, and carcass characteristics of heat-stressed broiler chicks

Jalon Gaines\*<sup>UG</sup>, Ala Abudabos *Department of Agriculture, School of Agriculture and Applied Sciences, Alcorn State University*

### P340

Effect of post hatch delayed access to feed and water with dietary betaine supplementation on intestinal morphology, blood parameters, antioxidant status, and body temperature of broiler chickens reared under cyclic heat stress.

Opeoluwa Judo\*<sup>1GS</sup>, Ali Al Sulaiman<sup>2</sup>, Ala Abudabos<sup>3</sup> <sup>1</sup>Department of Agriculture, School of Agriculture and Applied Sciences, Alcorn State University, <sup>2</sup>National Center for Environmental Technology, Institute of Biology and Environment, King Abdulaziz City for Science and Technology, <sup>3</sup>Alcorn State University

### P341

Evaluation to select a novel probiotic for efficacy in the feed and bird

Anna Kathryn Riggs\*<sup>1UG</sup>, Dalton Dennehy<sup>1</sup>, Emily Myers<sup>1</sup>, Brody Hamm<sup>1</sup>, Jorge Urrutia<sup>1</sup>, Samantha Plocher<sup>1</sup>, Skylar White<sup>2</sup>, Kelley Wamsley<sup>1</sup> <sup>1</sup>Poultry Science Department, Mississippi State University, <sup>2</sup>NCH Life Sciences

### P342

Early 1,25-dihydroxyvitamin D3-glycosides supplementation: an efficient feeding strategy against bacterial chondronecrosis with osteomyelitis lameness in broilers assessed by aerosol transmission challenge model

Anh Dang Trieu Do\*<sup>1,2GS</sup>, Andi Asnayanti<sup>1,2,3</sup>, Khawla Alharbi<sup>1,2</sup>, Ruvindu Perera<sup>1,2</sup>, Layla Al-Mitib<sup>1,4</sup>, Wesley Vaught<sup>1,4</sup>, Ashley Ault<sup>1,4</sup>, Abigail Fanous<sup>1,4</sup>, Hannah McCarver<sup>1,4</sup>, Kathrin Buehler<sup>5</sup>, Jan Dirk Van der Klis<sup>5</sup>, Javier Gonzalez<sup>6</sup>, Michael Kidd<sup>2</sup>, Adnan Alrubaye<sup>1,2,4</sup>  
<sup>1</sup>University of Arkansas Cell and Molecular Biology, <sup>2</sup>University of Arkansas Center of Excellence for Poultry Science, <sup>3</sup>National Agency of Drug and Food Control, <sup>4</sup>University of Arkansas Department of Biological Science, <sup>5</sup>Herbonis Animal Health GmbH, <sup>6</sup>Nuproxa

### P343

Dietary treatments of Microalgae and Organic Trace Minerals to reduce the incidence of Bacterial Chondronecrosis with Osteomyelitis in Broilers

Ruvindu Perera\*<sup>1GS</sup>, Andi Asnayanti<sup>1</sup>, Amer Hasan<sup>2</sup>, Khawla Alharbi<sup>1</sup>, Intisar Hassan<sup>1</sup>, Wesley Vaught<sup>1</sup>, Walter Bottje<sup>1</sup>, Samuel Rochel<sup>3</sup>, Marco Rebollo<sup>4</sup>, Michael Kidd<sup>1</sup>, Adnan Alrubaye<sup>1</sup>  
<sup>1</sup>University of Arkansas, <sup>2</sup>University of Baghdad, <sup>3</sup>Auburn university, <sup>4</sup>Zinpro Corporation

### P344

Synbiotic improves growth performance and immunity against lipopolysaccharide challenge by regulating splenic tryptophan metabolism in heat-stressed chickens

Yuechi Fu\*<sup>1GS</sup>, Heng-wei Cheng<sup>1,2</sup> <sup>1</sup>Department of Animal Sciences, Purdue University, <sup>2</sup>Livestock Behavior Research Unit, USDA-ARS

### P345

Effect of 50% inclusion of U.S. tannin-free sorghum and canthaxanthin pigment on laying hens

Santiago Sasia\*<sup>GS</sup>, Alexa Johnson, Gracie Anderson, William Bridges, Mireille Arguelles-Ramos, Ahmed Ali *Clemson University*



**P346**

Zymbiotics reduce *Salmonella* Typhimurium colonization and improve performance in broiler chickens

Davis Fenster\*<sup>1GS</sup>, Sudhir Yadav<sup>2</sup>, Rasha Qudsieh<sup>2</sup>, Jeng-Jie Wang<sup>2</sup>, Rami Dalloul<sup>1</sup> <sup>1</sup>*University of Georgia*, <sup>2</sup>*BioResource International*

**P347**

The effects of a multi-carbohydrase enzyme complex and direct-fed microbial supplementation to energy-reduced diets on broiler performance and carcass traits

Emily Jiral\*<sup>1GS</sup>, Jessica Rocha<sup>1</sup>, Hector Leyva-Jimenez<sup>2</sup>, Yemi Burden<sup>2</sup>, Carlos Soto<sup>2</sup>, Brian Dirks<sup>2</sup>, Gregory Archer<sup>1</sup> <sup>1</sup>*Texas A&M Agrilife Extension*, <sup>2</sup>*United Animal Health*

**P348**

Effects of phytase, 25-hydroxyvitamin D3 and cocci vaccination on growth performance, body composition and gut integrity of broilers fed with a calcium and phosphorus-reduced diet under *Eimeria* spp. challenge

Hanyi Shi\*<sup>GS</sup>, Deependra Paneru, Milan Sharma, Fatemeh Mahdavi, Venkata Choppa, Doyun Goo, Jihwan Lee, Hanseo Ko, Woo Kyun Kim *University of Georgia*

**P349**

Effects of Panaferd®<sup>®</sup>, a natural carotenoid source from *Paracoccus carotinifaciens*, on the performance, egg quality, yolk pigmentation, and carotenoid composition of eggs in laying hens

Deependra Paneru\*<sup>1</sup>, Dima White<sup>1</sup>, Yuki Kawashima<sup>2</sup>, Woo Kim<sup>1</sup> <sup>1</sup>*University of Georgia*, <sup>2</sup>*ANCI Inc.*

**P350**

Effects of *Artemisia annua* supplementation of performance and gut health of laying hens infected with *Eimeria* spp.

Milan Sharma\*, Guandhen Liu, Hanyi Shi, Doyun Goo, Jihwan Lee, Hanseo Ko, Venkata Sessa Reddy Choppa, Deependra Paneru, Fatemeh Sadat Mahdavi, Hamid Reza Rafieian Naeini, Brett Marshall, Woo Kim *Department of Poultry Science, University of Georgia*

**P351**

Enhancing Broiler Chicken Welfare: Mitigating Bacterial Chondronecrosis and Osteomyelitis Lameness with 1,25 Dihydroxycholecalciferol-Glycosides and Phytogetic Antioxidants khawla alharbi\*<sup>1,2</sup>, Andi Asnayanti<sup>1,2</sup>, Amer Hasan<sup>2,3</sup>, Wesley Vaughn<sup>3</sup>, Abigail Fanous<sup>3</sup>, Kathrin Buehler<sup>4</sup>, Jan Dirk Van der Klis<sup>4</sup>, Javier Gonzalez<sup>5</sup>, Adnan Arubaye<sup>1,2,3</sup> <sup>1</sup>*Department of Poultry Science, University of Arkansas*, <sup>2</sup>*Cell and Molecular Biology Program, University of Arkansas*, <sup>3</sup>*Department of Biological Sciences, University of Arkansas*, <sup>4</sup>*Herbonis Animal Health GmbH*, <sup>5</sup>*Nuproxa*

**P352**

Formaldehyde and propionic acid reduce starch gelatinization within a laboratory setting and may indicate reduced pellet quality

Kristina Bowen\*, Lucas Knarr, Emily Estanich, Joseph Moritz, Sean Estep *West Virginia University*

**P353**

Evaluation of humic acid properties and potential adsorption capacity of aflatoxin B1 in a simulated poultry digestive model

Jesus Maguey-Gonzalez\*<sup>1</sup>, Maria de Jesus Nava<sup>2</sup>, Sergio Gomez<sup>3</sup>, Juan Latorre<sup>1</sup>, Maria de Lourdes Angeles<sup>3</sup>, Bruno Solis<sup>4</sup>, Daniel Hernandez<sup>4</sup>, Juan de Dios Figueroa<sup>5</sup>, Alma Vazquez<sup>2</sup>, Abraham Mendez<sup>2</sup>, Guillermo Tellez<sup>1</sup>, Billy Hargis<sup>1</sup> <sup>1</sup>*Department of Poultry Science, University of Arkansas*, <sup>2</sup>*UIM, L14: Alimentos, Micotoxinas, y Micotoxinos, FES-C, UNAM*, <sup>3</sup>*CENID-INIFAP*, <sup>4</sup>*UIM, L5: LEDEFAR, FES-C, UNAM*, <sup>5</sup>*CINVESTAV-Querétaro*

**P354**

Assessment of dietary glucose oxidase supplementation on *Salmonella* Enteritidis infection in broiler chickens. A pilot study.

Grecia Cardoso-Luna\*<sup>1</sup>, Rubén Merino-Guzmán<sup>1</sup>, Guillermo Tellez-Isaías<sup>2</sup>, Juan Latorre-Cardenas<sup>2</sup>, Raúl Marcon<sup>2</sup>, Latasha Gray<sup>2</sup>, Makenly Coles<sup>2</sup>, Billy Hargis<sup>2</sup>, Lauren Laverty<sup>2</sup>, Kristen Martin<sup>2</sup>, Udochi Kemakolam<sup>2</sup>, Ileana Ramírez-Loeza<sup>2</sup> <sup>1</sup>*Universidad Nacional Autónoma de México*, <sup>2</sup>*University of Arkansas*

**P355**

Effect of dietary Almond Hull supplement on growth performance, nutrient retention, organ weight, caecum microbial and noxious gas emission in broilers

Songbo Cho\*, Golam Sagir Ahammad, In Ho Kim *Dankook University, Department of Animal Resource and Science*

**P356**

Comparative effects of eubiotic feed additives used in shuttle or straight modes on performance, coccidia lesion scores and bacterial counts in environmentally challenged broilers

Luis Gomez\*, Vasil Stanev<sup>1</sup>, Sandra Bonaspetti<sup>1</sup>, Bruce Johnson<sup>1</sup>, James McNaughton<sup>2</sup>, Tim Buisker<sup>3</sup> <sup>1</sup>*Phibro Animal Health Corporation*, <sup>2</sup>*AHPPharma, Inc.*, <sup>3</sup>*Smart Data Science Solutions*

**P357**

Efficacy of a low inclusion clay in preventing the deleterious effects caused by aflatoxins in broiler chickens

Carlos Mallmann\*, Leandro Giacomini<sup>1</sup>, Diego Sturza<sup>2</sup>, Manuel Contreras<sup>2,3</sup> <sup>1</sup>*Federal University of Santa Maria/Laboratório de Análises Micotoxicológicas (LAMIC)*, <sup>2</sup>*Laboratório de Soluções Analíticas, Microbiológicas e Tecnológicas (SAMITEC)*, <sup>3</sup>*Special Nutrients/Agrimprove*

**P358**

Supplementation of probiotics in drinking water improved the productive performance, gut health and tissue response of slow-growing pasture-raised broiler chickens

Ayodeji Aderibigbe\* *Florida A and M University*

**P359**

Microencapsulation of phytogetic feed additive improves performance antioxidant status and egg quality in laying hens raised under tropical conditions

Sureerat Thuekeaw\*, Tonglian Buwjoom<sup>1</sup>, Chackrit Nuengjamnong<sup>2</sup> <sup>1</sup>*Faculty of Animal Science and Technology, Maejo University*, <sup>2</sup>*Department of Animal Husbandry, Faculty of Veterinary Science, Chulalongkorn University*

**P360**

The potential of Zymbiotics® to replace coccidiostat in broiler production

Basheer Nusairat\*, Rasha Qudsieh<sup>1,2,3</sup>, Jeng-Jie Wang<sup>1,3</sup> <sup>1</sup>*Jordan University of Science and Technology*, <sup>2</sup>*BioResource International, Inc.*, <sup>3</sup>*BioResource International, Inc*

**P361**

Double-buffered sodium butyrate addition enables to maintain good performance in broilers fed low energy-protein diet

Clemence Marecaille<sup>1</sup>, Willem Smink<sup>2</sup>, Julian Melo\*, Xavier Roulleau<sup>1</sup> <sup>1</sup>*Dietaxion SAS*, <sup>2</sup>*FEED INNOVATION SERVICES*, <sup>3</sup>*Universidad Nacional de Luján*

**P362**

Effect of saponins from Yucca and Quillaja, added alone or in combination on production performance and ammonia emissions in broilers

Megan Koppen\*, Rob Payne, Manuel Da Costa *Cargill Animal Nutrition*

**P363**

The calming effect of Melissa officinalis extract (Nor-Balm®) in association with magnesium to improve meat quality: an in-field trial

Sekhou Cisse<sup>1,2</sup>, Julia Laurain<sup>2</sup>, Mohammed Benarbia\*<sup>1,2</sup> <sup>1</sup>*Labcom FeedInTech*, <sup>2</sup>*Nor-Feed SAS*

**P364**

The effect of an organic, all-natural blend of yeast complex carbohydrates on broiler growth performance, carcass yield, and Salmonella prevalence of 0-to-42-day old broilers

Theresia Lavergne\*, Carl Jones, Charlie Elrod *Natural Biologics, Inc.*

**P365**

Effect of feeding protected sodium butyrate on production performance and intestinal health of broilers: a meta-analysis

Abdelhacib Kihal\*, Monica Puyalto, Juan Jose Mallo *Norel S.A*

**P366**

The effects of an anti-mycotoxin agent containing adsorbent material, curcumin and silymarin extracts and yeasts on the gut integrity of broiler chickens challenged by T-2 mycotoxin  
Insaf Riahi\*<sup>1</sup>, Meritxell Sadurní<sup>1</sup>, Diego Sturza<sup>2</sup>, Leandro Giacomini<sup>2</sup>, Carlos Mallmann<sup>3</sup>  
<sup>1</sup>Technical Department, BIÖNTE Nutrition, <sup>2</sup>Instituto SAMITEC, <sup>3</sup>Laboratório de Análises Micotoxicológicas, Universidade Federal de Santa Maria

**P367**

Calibrin®-Z decreases effects of Aflatoxins, Fumonisin, and T-2 toxin in broilers  
San Ching\*, LeAnn Johnston, Eduardo Baggio *Amlan International*

**P368**

In vitro efficacy of ammonium formate vs sodium formate against different bacteria of interest in poultry

Laura Martinez-Villagrasa\*<sup>1</sup>, Monica Puyalto<sup>1</sup>, Juan José Mallo<sup>1</sup>, Aida Yuste Parareda<sup>2</sup>, María Ángeles Calvo Torras<sup>2</sup>  
<sup>1</sup>NOREL, <sup>2</sup>Universidad Autónoma de Barcelona

**P369**

Impact of Organic Acid–Phytogen Composite on intestinal health of Broiler Breeders using the ISI Sys system in Brazil

Carolina Perry<sup>1</sup>, Bruna Belote\*<sup>2</sup>, Igor Soares<sup>2</sup>, Fernando Ugrnani<sup>3</sup>, Rafael Canonenco de Araujo<sup>1</sup>  
<sup>1</sup>GRASP, <sup>2</sup>ISI Insitute, <sup>3</sup>State University of Maringa

**P370**

The impact of a triple-strain Bacillus-based probiotic on gut microbiome modulation and egg contamination in laying hens challenged with Salmonella Typhimurium

Antoine Meuter\*<sup>1</sup>, Samiullah Khan<sup>2</sup>, Kay Russo<sup>3</sup>, Eric Sobotik<sup>3</sup>  
<sup>1</sup>Chr. Hansen A/S, <sup>2</sup>School of Animal and Veterinary Sciences, The University of Adelaide, <sup>3</sup>Chr. Hansen Inc.

**P371**

Enhancing the shell strength, intrinsic quality, and shelf-life extension of eggs during the late lay period through a commercial triple-strain Bacillus-based probiotic supplementation in layer diets

Antoine Meuter\*<sup>1</sup>, Rogerio Frozza<sup>2</sup>, Ibiara Paz<sup>3</sup>, Eric Sobotik<sup>4</sup>, Kay Russo<sup>4</sup>  
<sup>1</sup>Chr. Hansen A/S, <sup>2</sup>Chr. Hansen, <sup>3</sup>Faculdade de Medicina Veterinária Zootecnia. UNESP, <sup>4</sup>Chr. Hansen Inc.

**P372**

The effects of essential oil from Lippia origanoides and herbal betaine on performance, intestinal integrity, bone mineralization and meat quality in broiler chickens subjected to cyclic heat stress.

Roberto Senas-Cuesta\*<sup>1</sup>, Billy Hargis<sup>1</sup>, Andressa Stein<sup>1</sup>, Juan Latorre<sup>1</sup>, Clay Maynard<sup>1</sup>, Xochitl Hernandez-Velasco<sup>2</sup>, Victor Petrone-García<sup>3</sup>, Elizabeth Greene<sup>1</sup>, Makenly Coles<sup>1</sup>, Latasha Gray<sup>1</sup>, Lauren Laverty<sup>1</sup>, Kristen Martin<sup>1</sup>, Ileana Loeza<sup>1</sup>, Alvaro Uribe<sup>4</sup>, Blanca Martinez<sup>4</sup>, Jaime Isaza<sup>4</sup>, Danielle Graham<sup>1</sup>, Casey Owens<sup>1</sup>, Guillermo Tellez-Isaias<sup>1</sup>  
<sup>1</sup>Department of Poultry Science, University of Arkansas., <sup>2</sup>Universidad Nacional Autonoma de Mexico, <sup>3</sup>Facultad de Estudios Superiores de Cautitlan, <sup>4</sup>Promitec

**P373**

Use of animal feed grade sodium bisulfate supplementation, alone or in combination with other feed additives, on broiler performance

Bradley Turner\*<sup>1</sup>, Craig Coufal<sup>2</sup>, Juan Suarez<sup>2</sup>  
<sup>1</sup>Poultry Research Partners, LLC, <sup>2</sup>Jones-Hamilton Co.

**P374**

Evaluation of organic acid Fortrol on the microbial loads of feed, the microbiota of broiler chickens, and broiler performance from d0-49

Callie Selby\*<sup>1</sup>, Enrique Montiel<sup>1,2</sup>, Juan David Latorre<sup>2</sup>, Guillermo Tellez<sup>2</sup>, Billy Hargis<sup>2</sup>, Raul Marcon<sup>2</sup>, Roberto Senas-Cuesta<sup>2</sup>, Makenly Coles<sup>2</sup>  
<sup>1</sup>Anitox Corporation, <sup>2</sup>Department of Poultry Science, University of Arkansas

**P375**

ALTERNA® improved early lay performance when fed after onset of production in commercial cage free layers

Ashley Wagner\*<sup>1</sup>, Olivia Martin<sup>1</sup>, Jessica Suagee-Bedore<sup>2</sup>, Bill Achor<sup>3</sup>, Ivan Girard<sup>1</sup>  
<sup>1</sup>Probiotech International Inc., <sup>2</sup>Virginia Tech, <sup>3</sup>York Ag Products

**P376**

Effects of Peptasan supplementation on Growth performance, Gut health and Antioxidant enzyme in Broiler chickens challenged with *Eimeria* spp.

Jihwan Lee\*, Doyun Goo, Hanseo Ko, Woo Kim *University of Georgia*

**P377**

Role of novel natural nutritional emulsifier 'BioEmulsin DS' in optimizing fat utilization and energy saving in poultry diets

Shivi Maini\*<sup>1</sup>, Hitesh Pawar<sup>2</sup>, Deepak Singhare<sup>3</sup>, Sanjay Suradkar<sup>3</sup> <sup>1</sup>*Indian Herbs Specialities*, <sup>2</sup>*Verity Vet Laboratories*, <sup>3</sup>*IPMT*

**P378**

BioEmulsin DS - Not just another emulsifier

Shivi Maini\*<sup>1</sup>, Hitesh Pawar<sup>2</sup> <sup>1</sup>*Indian Herbs*, <sup>2</sup>*Verity Vet Laboratories*

**P379**

Interplay of phylogenetics and genomics : Potential to boost performance in broilers by improving fat utilization

Hitesh Pawar<sup>1</sup>, Shivi Maini\*<sup>2</sup> <sup>1</sup>*Variety laboratory*, <sup>2</sup>*Indian Herbs*



## **Poster Reception**

Monday, January 29

**4:00 – 6:00 p.m.**

## **Milton L. Dendy Keynote Address**

B-313

Tuesday, January 30

**11:00 a.m.**

Dr. Hannah Thonpson-Weeman, Animal Agriculture Alliance

Chair: Dr. Tomi Obe, UARK

## **SCAD Business Meeting**

B-312

Tuesday, January 30

**Noon**

Chair: Dr. Tomi Obe, UARK

## **SPSS Business Meeting**

B-314

Tuesday, January 30

**Noon**

Chair: Dr. Jesse Grimes, NCSU

## **2023 SPSS Student Awards:**

### **Metabolism & Nutrition**

Caleb Marshall, MSSTATE (Wamsley)

Brittany Wall, Auburn (J. Starkey)

Jay Hampton, Auburn (Rochell)

Charis Waters, MSSTATE (Adhikari)

Cooper Fritzlen, VT (Persia)

Lucas Knarr, WVU (Moritz)

Guanchen Liu, UGA (Kim)

### **Environment Management**

Luis Avila, UGA (Wilson)

### **Processing & Products/Teaching**

Amber Richards, UGA (Shariat)

### **Physiology**

Micaela Sinclair-Black, UGA (Ellestad)

Chrysta Beck, UARK (Erf)

### **Pathology**

Grayson Walker, NCSU (Borst)

### **Posters**

Sethulakshmi Sasidharan, MSSTATE

(Peebles)

Ramesh Bist, UGA (Chai)

Olumide Falana, Auburn (Linhoss)

Shahna Fathima, UGA (Selvaraj)

Julianna Jespersion, U. Illinois (Dilger)

### **Graduate Travel Awards**

Shahna Fathima, UGA

Grayson Walker, NCSU

### **Don R. Sloan Undergraduate Research Award Recipient**

Oral: Walter Friesen, KSU (Paulk)

Poster: Matthew Hughes, Auburn (Bourassa)

### **Undergraduate Research Competition Participants**

Ashley Tarcin, U. Wisc

Kylie Roesler, UARK

Erika King, TN Tech

Alessandro Rocchi, UARK

Rachel Strobeck, MTN State

Matthew Hughes, Auburn

Walter Friesen, KSU

John Rogers, Auburn

Carter Minson, KSU

Jordan Smith, S. ARK

Linda Barahona, Zamaranao

John Helt, UARK

Yudith Hernandez-Valencia, Cal State Fresno

William Westerlund, Auburn

## 2023 SCAD Student Awards:

### Oral Presentation Award

Roel Becerra UGA

### Poster Presentation Award

Emily Cason, UGA

## Past Presidents of the Southern Conference on Avian Diseases

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