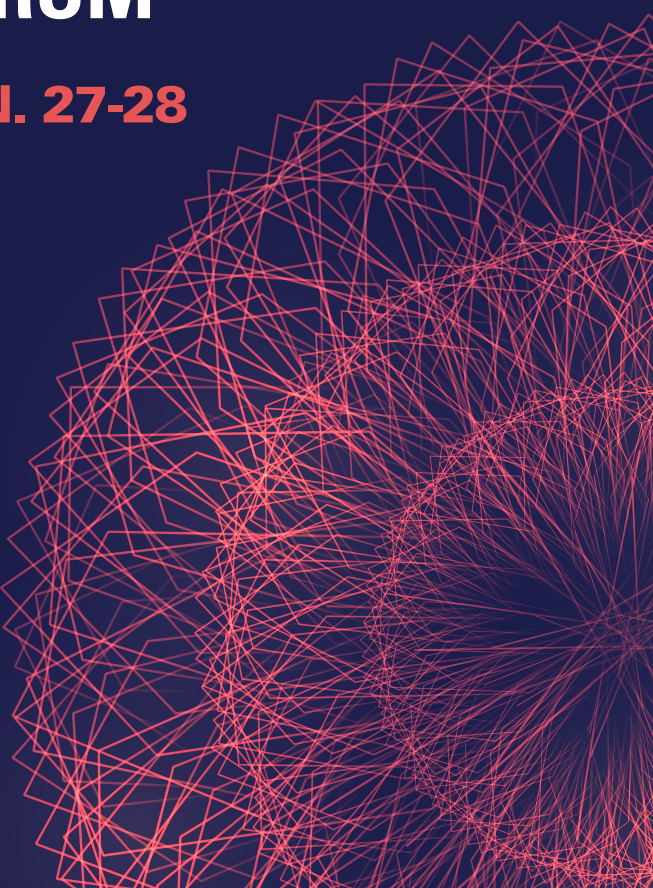




**2025**

**INTERNATIONAL  
POULTRY  
SCIENTIFIC  
FORUM**

**JAN. 27-28**



# 2025 INTERNATIONAL POULTRY SCIENTIFIC FORUM

## Concurrent Meeting of

*The Southern Poultry Science Society 46th Annual Meeting*

*The Southern Conference on Avian Diseases 66th Annual Meeting*

*January 27-28, 2025*

## Program Summary

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### MONDAY SESSIONS

<b>JANUARY 27</b>	<b>ROOM NUMBER</b>	<b>TIME</b>	<b>PAGE NUMBER</b>
Physiology I	B404	7:00-10:00 Dr. Sami Dridi, UARK	6
Physiology II	B404	10:15-Noon Dr. Ramon Malheiros, NCSU	8
Environment & Management I	B404	1:00-4:00 Dr. Ken Anderson, NCSU	9
Metabolism & Nutrition I Enzymes	B405	7:00-8:00 Dr. Abiodun Bello, Danisco-IFF	11
Pathology	B405	8:00-10:15 Dr. Julia Blakey, USDA-ARS	12
SCAD I	B405	10:45-Noon Dr. Luis Munoz, MSSTATE	14
SCAD II	B405	1:00-4:00 Dr. Silvia Carnaccini, Iowa State	15
Welfare & Behavior I	B406	7:30-9:45 Dr. Rosemary Walzem, TAMU	17
Welfare & Behavior II	B406	10:00-12:00 Dr. Leonie Jacobs, VT	19
Food Safety I	B406	1:00-4:00 Dr. Tomi Obe, UARK	21
Processing & Products	B407	7:30-9:15 Dr. Yan Campbell, NCSU	23
Metabolism & Nutrition II General Nutrition	B407	9:15-10:00 Dr. John Boney, Penn State	24
Metabolism & Nutrition III General Nutrition	B407	10:15-12:00 Dr. John Boney, Penn State	25
Metabolism & Nutrition IV General Nutrition	B407	1:00-2:00 Dr. Kelley Wamsley, MSSTATE	26
Metabolism & Nutrition V Vitamins & Minerals	B407	2:00-4:00 Dr. Kelley Wamsley, MSSTATE	27
Metabolism & Nutrition VI Amino Acids, Feed Additives	B408	7:15-10:15 Dr. Mike Persia, VT	29
Metabolism & Nutrition VII Vitamins & Minerals	B408	10:30-Noon Dr. Frances Yan, Novus International	31
Metabolism & Nutrition VIII Amino Acids, Enzymes	B408	1:00-4:00 Dr. Pratima Adhikari, MSSTATE	32

Posters Displayed	Noon-6:00	Dr. Chrysta Beck, UARK; Dr. Chongxiao Chen, UGA
Student Competition	B402	4:00-6:00
Non-student Posters	Foyer	4:00-6:00
Wine & Cheese Reception	Foyer	4:00-6:00

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## TUESDAY SESSIONS

<b>JANUARY 28</b>	<b>ROOM NUMBER</b>	<b>TIME</b>	<b>PAGE NUMBER</b>
Posters Displayed	Foyer & B402	8:00-12:00	
Metabolism & Nutrition IX Feed Additives	B404	7:00-11:00 Dr. Theresia Lavergne, Natural Biologics Dr. Cody Flores, Devenish Nutrition	34
SCAD III	B405	7:45-10:45 Dr. Jossie M. Santamaria, UARK	37
Metabolism & Nutrition X Feed Additives	B406	7:00-11:00 Dr. Midian Nascimento dos Santos, Trouw Dr. Bayo Sokale, BASF	39
Welfare & Behavior III	B407	7:00-8:15 Dr. T. Bas Rodenburg, Utrecht	42
Metabolism & Nutrition XI General Nutrition	B407	8:15-9:45 Dr. Diego Martinez, UARK	43
Metabolism & Nutrition XII General Nutrition	B407	9:45-11:00 Dr. Diego Martinez, UARK	44
Environment & Management II	B408	7:00-8:30 Dr. Jessica Drewry, MSSTATE	45
Food Safety II	B408	8:30-11:00 Dr. Jinquan Wang, Auburn	46
Milton L. Dendy Keynote Lecture	B405	11:00-12:00	
SCAD Business Meeting	B405	12:00-1:00	
SPSS Business Meeting	B407	12:00-1:00	

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## Physiology I

Moderator: Sami Dridi, University of Arkansas

Room Number: B404

Monday, January 27, 2025

### 7:00 AM M1

Physiological response of broiler ducks fed Cocoa (*theobroma cacao*) pod husk

Muslim K. Ewuola\*, Kazeem O. Jolayemi, Abubakar Musa, Florence A. Salako, Rasheed A. Hamzat

*Animal Science, University of Abuja, Abuja, FCT/Abuja, Nigeria*

### 7:15 AM M2

Cloacal feather trimming improves reproductive performance of layer breeder roosters

Eder O. Barbosa<sup>2</sup>, Regina C. Porto<sup>2</sup>, Felipe L. Kroetz Neto<sup>3</sup>, Ricardo J. Pereira<sup>\*1</sup>

<sup>1</sup>*Animal Reproduction, College of Veterinary Medicine and Animal Sciences - São Paulo University, Pirassununga, São Paulo, Brazil*, <sup>2</sup>*Mercoaves Comercio de Aves Ltda, Piracicaba, São Paulo, Brazil*, <sup>3</sup>*Aviagen America Latina Ltda, Campinas, São Paulo, Brazil*

### 7:30 AM M3

Preclinical gene expression alterations in the uterovaginal junction of turkey hens infected with low pathogenic avian influenza

Sunantha Kosonsiriluk<sup>\*1</sup>, Pitchaya Santativongchai<sup>1</sup>, Kent Reed<sup>2</sup>, Milena Saqui-Salces<sup>1</sup>, Marissa Studniski<sup>3</sup>, Ben Wileman<sup>3</sup>, Kahina Boukherroub<sup>1</sup>

<sup>1</sup>*Animal Science, University of Minnesota, Saint Paul, Minnesota, United States*, <sup>2</sup>*Veterinary and Biomedical Sciences, University of Minnesota, Saint Paul, Minnesota, United States*, <sup>3</sup>*Select Genetics, Willmar, Minnesota, United States*

### 7:45 AM M4

Hepatic corticosterone binding globulin mRNA expression in chickens of different ages, strains, and genders

Coleman J. Hatmaker<sup>\*GS</sup>, Adam J. Davis, Martha E. Freeman

*Department of Poultry Science, University of Georgia, Athens, Georgia, United States*

### 8:00 AM M5

Impact of heat stress on hepatic lipogenesis in broilers: a comparison of low- and high-water efficient lines

Maria Fernandez Cuadrado<sup>\*GS</sup>, Elizabeth S. Greene, Sami Dridi

*Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States*

### 8:15 AM M6

Effect of thermal variation during early-stage incubation on broiler chicken muscle satellite cell populations at transfer and hatch

J. Wesley Rogers<sup>\*1GS</sup>, Brittany L. Hutson<sup>1</sup>, Martha S. Rueda<sup>1,2</sup>, Jeremiah D. Davis<sup>2</sup>, Katie E. Elliott<sup>3</sup>, Charlene Hanlon<sup>1</sup>, Charles W. Starkey<sup>4</sup>, Jessica D. Starkey<sup>1</sup>

<sup>1</sup>*Department of Poultry Science, Auburn University, Auburn, Alabama, United States*, <sup>2</sup>*National Poultry Technology Center, Auburn University, Auburn, Alabama, United States*, <sup>3</sup>*Poultry Research Unit, USDA-ARS, Mississippi State, Mississippi, United States*, <sup>4</sup>*Scientific and Regulatory Affairs, North American Renderers Association, Alexandria, Virginia, United States*

### 8:30 AM M7

Effect of thermal variation during late-stage incubation on broiler chicken body weight gain and *Pectoralis major* muscle growth characteristics

Juan J. Barberena<sup>\*1GS</sup>, J. Wesley Rogers<sup>1</sup>, Brittany L. Hutson<sup>1</sup>, J. Enrique Banegas<sup>1</sup>, Martha S. Rueda<sup>1,2</sup>, Jeremiah D. Davis<sup>2</sup>, Katie E. Elliott<sup>3</sup>, Charlene Hanlon<sup>1</sup>, Charles W. Starkey<sup>4</sup>, Jessica D. Starkey<sup>1</sup>

<sup>1</sup>*Department of Poultry Science, Auburn University, Auburn, Alabama, United States*, <sup>2</sup>*National Poultry Technology Center, Auburn University, Auburn, Alabama, United States*, <sup>3</sup>*Poultry Research Unit, USDA-ARS, Mississippi State, Mississippi, United States*, <sup>4</sup>*Scientific and Regulatory Affairs, North American Renderers Association, Alexandria, Virginia, United States*

**8:45 AM M8**

Influence of euthanasia methods on broiler blood metabolites  
Madalyn Jennings\*<sup>GS</sup>, Abigail McConnell, Matthew Hughes, Dianna Bourassa  
*Auburn University, Auburn, Alabama, United States*

**9:00 AM M9**

Validation of a Photoelectric Sensor System to Detect Oviposition Timing in Individually Caged Broiler Breeders

Lauren R. Sroda\*<sup>1GS</sup>, Jeremiah D. Davis<sup>1</sup>, Kristin Diehl<sup>3</sup>, Carson M. Edge<sup>1</sup>, Madison Berger<sup>2</sup>, Katie E. Elliott<sup>3</sup>, Brenda Flack<sup>4</sup>, Charlene Hanlon<sup>2</sup>

<sup>1</sup>*National Poultry Technology Center, Auburn University, Auburn, Alabama, United States*, <sup>2</sup>*Department of Poultry Science, Auburn University, Auburn, Alabama, United States*, <sup>3</sup>*USDA ARS, Beltsville, Maryland, United States*, <sup>4</sup>*Cobb-Vantress, Fayetteville, Arkansas, United States*

**9:15 AM M10**

Impact of Oviposition Timing on Egg Quality: Translucency, Speckling, and Shell Characteristics

Leticia A. Orellana Galindo\*<sup>1GS</sup>, Cassidy A. Morris<sup>2</sup>, Luis Muñoz<sup>1</sup>, Laura Jimenez<sup>3</sup>, Tania Roman<sup>3</sup>, Tatiana Salazar<sup>3</sup>, Josselyn Herrera<sup>3</sup>, Arley Fernandez<sup>3</sup>, Jason Cordero<sup>3</sup>, Luis Castro<sup>3</sup>, Juan Diego Gonzalez<sup>3</sup>, Dulman Serrano<sup>3</sup>, Kenneth Macklin<sup>1</sup>

<sup>1</sup>*Poultry Science, Mississippi State University, Starkville, Mississippi, United States*, <sup>2</sup>*Poultry Science, Mississippi State University, Moulton, Alabama, United States*, <sup>3</sup>*Cargill Protein Latin America, Puntarenas, Costa Rica*

**9:30 AM M11**

Impact of 28-day storage on translucency score and eggshell quality parameters of W-36 laying hens

Cassidy A. Morris\*<sup>GS</sup>, Charis A. Waters, Pratima Adhikari, Kenneth Macklin  
*Poultry Science, Mississippi State University, Moulton, Alabama, United States*

**9:45 AM M12**

Effects of eggshell metrics on hatchability and chick development of two genetic lines

Paola Andrea Amaya\*<sup>1GS</sup>, Edgar Leonardo Molina Villarraga<sup>1</sup>, Caleb M. Marshall<sup>1</sup>, Cesar Guato Guaman<sup>1</sup>, Duarte Neves<sup>2</sup>, Edgar O. Oviedo-Rondón<sup>1</sup>

<sup>1</sup>*Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States*, <sup>2</sup>*Zinpro Corporation, Eden Prairie, Minnesota, United States*

**10:00 AM Break – Room B409**

## Physiology II

Moderator: Ramon Malheiros, North Carolina State University

Room Number: B404

Monday, January 27, 2025

### 10:15 AM M13

Receptor expression in the shell gland of commercial laying hens indicates it may be a novel target for FGF23

R. Alejandra Garcia-Mejia\*<sup>1GS</sup>, Micaela Sinclair-Black<sup>1</sup>, Jordan Castle<sup>1</sup>, Folanike Olatunji<sup>1</sup>, Roselina Angel<sup>2</sup>, Xabier Arbe<sup>3</sup>, David Caverro<sup>3</sup>, Laura E. Ellestad<sup>1</sup>

<sup>1</sup>*Poultry Science, University of Georgia, Athens, Georgia, United States*, <sup>2</sup>*Animal and Avian Sciences, University of Maryland, College Park, Maryland, United States*, <sup>3</sup>*H&N International, Cuxhaven, Germany*

### 10:30 AM M14

Making a splash: Environmental enrichment has no effect on brain dopamine and serotonin levels or activity in Pekin ducks.

Nina Wilson\*<sup>1UG</sup>, Jenna M. Schober<sup>1</sup>, Gregory S. Fraley<sup>2</sup>

<sup>1</sup>*Purdue University, Knox, Indiana, United States*, <sup>2</sup>*Purdue University, West Lafayette, Indiana, United States*

### 10:45 AM M15

Orange Corn-based diet improves total antioxidant capacity in layer pullets compared to traditional yellow corn diets

Serena Wesley\*<sup>1UG</sup>, Tyler Lawson<sup>2</sup>, Evan Rocheford<sup>2</sup>, Torbert Rocheford<sup>3</sup>, Sara Cloft<sup>1</sup>, Darrin Karcher<sup>1</sup>, Gregory S. Fraley<sup>1</sup>

<sup>1</sup>*Animal Science, Purdue University, West Lafayette, Indiana, United States*, <sup>2</sup>*Nutramaize, West Lafayette, Indiana, United States*, <sup>3</sup>*Agronomy, Purdue University, West Lafayette, Indiana, United States*

### 11:00 AM M16

The effect of *Eurycoma longifolia* (Longjack) on semen characteristics on aging broiler breeder roosters

Jacob C. Wesson\*<sup>1UG</sup>, Emmillie Boot<sup>1</sup>, Beverly McLendon<sup>2</sup>, Skye Freeland<sup>2</sup>, Tatyany S. Mani<sup>2</sup>, Rebecca Wysocky<sup>2</sup>, Ramon Malheiros<sup>2</sup>

<sup>1</sup>*Poultry Science, North Carolina State University, Raleigh, North Carolina, United States*, <sup>2</sup>*Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States*

### 11:15 AM M17

Impact of feeding regimens during rearing on sperm quality and fertilization capacity of broiler breeder hens and roosters through sexual maturity

Madison Berger\*<sup>1GS</sup>, Kristin Diehl<sup>2</sup>, Brenda Flack<sup>3</sup>, Patricia Quino<sup>1</sup>, Olivia McGuire<sup>1</sup>, Kristian Almendares<sup>1</sup>, Charlene Hanlon<sup>1</sup>

<sup>1</sup>*Department of Poultry Science, Auburn University, Auburn, Alabama, United States*, <sup>2</sup>*Beltsville Agricultural Research Center, USDA-ARS, Beltsville, Maryland, United States*, <sup>3</sup>*Cobb-Vantress, Siloam Springs, Arkansas, United States*

### 11:30 AM M18

Reference point methodology with chicken tibiae

Dylan W. Seats\*<sup>UG</sup>, Sara Cloft, Brittney Emmert, Darrin Karcher

*Department of Animal Sciences, Purdue University, West Lafayette, Indiana, United States*

### 11:45 AM M19

Comparative analysis of body composition and bone microarchitecture in wild-type and restricted ovulator hens

Deependra Paneru\*<sup>GS</sup>, Fatemeh S. Mahdavi, Venkata Prathap Reddy Keshavareddy, Sai Kumar Reddy Ragyari, Woo Kyun Kim

*Department of Poultry Science, University of Georgia, Athens, Georgia, United States*

### 12:00 PM Lunch

## **Environment and Management I**

Moderator: Kenneth Anderson, North Carolina State University

Room Number: B404

Monday, January 27, 2025

### **1:00 PM M20**

Effects of synchronizing body weight and photostimulation on cage-free pullets to maximize reproductive capacity

Olivia McGuire<sup>\*1GS</sup>, Regina Halm<sup>2</sup>, Ana Rentsch<sup>2,3</sup>, Sam Maaskant<sup>2</sup>, Grégoy Bédécarrats<sup>2</sup>, Bethany Baker-Cook<sup>1</sup>, Charlene Hanlon<sup>1</sup>

<sup>1</sup>*Department of Poultry Science, Auburn University, Auburn, Alabama, United States*, <sup>2</sup>*Department of Animal Biosciences, University of Guelph, Guelph, Ontario, Canada*, <sup>3</sup>*Campbell Centre for the Study of Animal Welfare, University of Guelph, Guelph, Ontario, Canada*

### **1:15 PM M21**

Effects of the shift from caged to aviary housing systems on commercial laying hen egg grade and quality

Taylor O'Lear Reid<sup>\*GS</sup>, Rebecca Wysocky, Ishab Poudel, Kenneth Anderson  
*North Carolina State University, Raleigh, North Carolina, United States*

### **1:30 PM M22**

Enhancing Mortality Detection in Broiler Production: Evaluating a Rail-Mounted Robotic System's Accuracy and Limitations

Tanner Thornton<sup>\*1GS</sup>, Shawn Hawkins<sup>2</sup>, Yang Zhao<sup>1</sup>, Tom Tabler<sup>1</sup>, Robert Burns<sup>2</sup>

<sup>1</sup>*Animal Science, University of Tennessee-Knoxville, Knoxville, Tennessee, United States*, <sup>2</sup>*Biosystems Engineering and Soil Sciences, University of Tennessee-Knoxville, Knoxville, Tennessee, United States*

### **1:45 PM M23**

The effect of silvopasture environment and genetic strain on broiler performance

Athena D. He-DeMontaron<sup>\*GS</sup>, Jesse L. Grimes, Yan L. Campbell, Lin L. Walker, Allison N. Pullin

*Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States*

### **2:00 PM M24**

Effect of litter condition on the duodenal proteome of young broiler chickens  
Gerardo A. Abascal-Ponciano<sup>\*1GS</sup>, Melissa D. Boersma<sup>2</sup>, A. Jake Keel<sup>1</sup>, Charles W. Starkey<sup>3</sup>, Jessica D. Starkey<sup>1</sup>

<sup>1</sup>*Poultry Science Department, Auburn University, Auburn, Alabama, United States*, <sup>2</sup>*Department of Chemistry and Biochemistry, Auburn University, Auburn, Alabama, United States*, <sup>3</sup>*Scientific and Regulatory Affairs, North American Renderers Association, Alexandria, Virginia, United States*

### **2:15 PM M25**

Ambient and conditioning temperature interactions alter steam dynamics during the pelleting process

Alexis Renner<sup>\*1GS</sup>, Emily B. Estanich<sup>1</sup>, Elizabeth A. Lynch<sup>1</sup>, Kristina M. Bowen<sup>1</sup>, Lucas E. Knarr<sup>2</sup>, Staci Cantley<sup>3</sup>, Joseph S. Moritz<sup>1</sup>

<sup>1</sup>*School of Agriculture of Food Systems, West Virginia University, Morgantown, West Virginia, United States*, <sup>2</sup>*School of Agriculture and Food Systems, West Virginia University, Morgantown, West Virginia, United States*, <sup>3</sup>*Nutritional Product Information, Huvepharma, Peachtree City, Georgia, United States*

### **2:30 PM M26**

Antimicrobial resistance in the different stages of commercial poultry production environment.

Pankaj P. Gaonkar<sup>\*1GS</sup>, Alinne Santana-Pereira<sup>1</sup>, Alyssa Lambert<sup>1</sup>, Reed Golden<sup>1</sup>, Courtney Higgins<sup>1</sup>, Yagya Adhikari<sup>2</sup>, Matthew Bailey<sup>2</sup>, Kenneth Macklin<sup>3</sup>, Laura Huber<sup>1</sup>

<sup>1</sup>*Pathobiology, College of Veterinary Medicine, Auburn University, Auburn, Alabama, United States*, <sup>2</sup>*Poultry Science, Auburn University, Auburn, Alabama, United States*, <sup>3</sup>*Poultry Science, Mississippi State University, Starkville, Mississippi, United States*

**2:45 PM M27**

Transportation elicits a decrease in serotonergic activity, but not dopaminergic activity, in 5-day-old grow-out Pekin ducklings.

Erica R. Roge\*<sup>1GS</sup>, Isabella von Seggern<sup>2</sup>, Jenna M. Schober<sup>3</sup>, Gregory S. Fraley<sup>4</sup>

<sup>1</sup>*Purdue University, Lafayette, Indiana, United States*, <sup>2</sup>*Animal Sciences, Purdue University, Columbia City, Indiana, United States*, <sup>3</sup>*Animal Science, Purdue University, Lafayette, Indiana, United States*, <sup>4</sup>*Purdue University, West Lafayette, Indiana, United States*

**3:00 PM M28**

Play that funky music Pekin duck: How auditory enrichment affects Pekin duck body condition, production, and fear response

Jenna M. Schober\*<sup>GS</sup>, Jordan Curry, Grace Ayres, Gabriella Chambers, Brynn Peterson, Emma Stuart, Gregory S. Fraley

*Animal Science, Purdue University, Lafayette, Indiana, United States*

**3:15 PM M29**

Exploring the use of computer vision and machine learning for bodyweight estimation in turkey hens

Mireia Molins\*<sup>GS</sup>, Luis Giron, John Boney, Enrico Casella

*Animal Science, Pennsylvania State University, State College, Pennsylvania, United States*

**3:30 PM M30**

Integrating Computer Vision and Data Science in Egg Science towards Advancing Poultry Education and Extension Program

Alin Khaliduzzaman\*

*Department of Agricultural and Biological Engineering, University of Illinois, Urbana, Illinois, United States*

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

## Metabolism and Nutrition I: Enzymes

Moderator: Abiodun Bello, Danisco Animal Nutrition - IFF

Room Number: B405

Monday, January 27, 2025

### 7:00 AM M31

Effects of novel protease from *Bacillus subtilis* K-5 on low protein and low energy guar (*Cyamopsis tetragonoloba*) meal based diets on performance and nutrients digestibility in broiler chickens

Aqeel Ahmed Shad\*<sup>1</sup>, Tanveer Ahmad<sup>1</sup>, Muhammad Farooq Iqbal<sup>1</sup>, Muhammad Javaid Asad<sup>2,3</sup>

<sup>1</sup>Livestock Production and Management, Pir Mehr Ali Shah - Arid Agriculture University, Rawalpindi, Rawalpindi, Punjab, Pakistan, <sup>2</sup>University Institute of Biochemistry and Biotechnology (UIBB), Pir Mehr Ali Shah - Arid Agriculture University, Rawalpindi, Rawalpindi, Punjab, Pakistan, <sup>3</sup>National Center of Industrial Biotechnology (NCIB), Pir Mehr Ali Shah - Arid Agriculture University, Rawalpindi, Rawalpindi, Punjab, Pakistan

### 7:15 AM M32

A high-dose of protease in the starter diet improves growth performance and intestinal morphometrics of broiler chickens challenged with *Escherichia coli*

Olufemi O. Babatunde\*, Glenmer Tactacan, Ludovic Lahaye, Miguel Barrios, Derek Detzler, Mariana L. de Moraes  
Jefo Nutrition Inc, Saint-Hyacinthe, Quebec, Canada

### 7:30 AM M33

Optimal phytase use enables complete removal of inorganic phosphate in young broiler chickens

Xaviere Rousseau\*<sup>1</sup>, Gilson Gomes<sup>1</sup>, Sudipto Halder<sup>2</sup>, Amrita K. Dhara<sup>2</sup>

<sup>1</sup>AB Vista, Marlborough, United Kingdom, <sup>2</sup>Agrivet Research and Advisory, Kolkata, India

### 7:45 AM M34

Comparison of two commercial proteases on *in vitro* peptide cleavage profiles and apparent ileal digestibility of amino acids using protein-rich ingredients and a complete diet

Abiodun Bello\*<sup>1</sup>, Jacob Lum<sup>2</sup>, M Baxter<sup>2</sup>, Susan Arent<sup>3</sup>, Karsten M. Kragh<sup>3</sup>, Kirsty Gibbs<sup>1</sup>, Ceinwen Evans<sup>1</sup>

<sup>1</sup>Danisco Animal Nutrition & Health - IFF, Oegstgeest, South Holland, Netherlands, <sup>2</sup>Ozark Avian Research, Gravette, Arkansas, United States, <sup>3</sup>Danisco Animal Nutrition & Health, IFF, Brabrand, Denmark

## Pathology

Moderator: Julia Blakey, USDA, ARS

Room Number: B405

Monday, January 27, 2025

### 8:00 AM M35

The effects of incremental inclusions of a novel blend of yeast cell wall, proteinate, and flavor on growth performance and oocyst count of coccidiosis vaccinated broiler chickens

Lauren Nolan<sup>2</sup>, Brett Lumpkins<sup>1</sup>, Greg F. Mathis<sup>1</sup>, Jose A. Soto<sup>\*2</sup>, Dulmelis Sandu<sup>2</sup>, Roy Brister<sup>2</sup>, Curtis Novak<sup>2</sup>

<sup>1</sup>*Southern Poultry Feed & Research, Inc., Athens, Georgia, United States*, <sup>2</sup>*Alltech Inc, Nicholasville, Kentucky, United States*

### 8:15 AM M36

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

Simmi Manuja\*, Dharanesh Gangaiah, Desmond Adeniyi, Jacob Shields, Ali Camara, Amy McMillan, Alecia Godoy, Eric Nungester, Michael Hicks, Emily Helmes, Arvind Kumar, Nathan Augspurger

*BiomEdit, LLC, Fishers, Indiana, United States*

### 8:30 AM M37

Leveraging autofluorescence for accurate enumeration of *Eimeria tenella* oocyst viability

Philip Yeboah<sup>\*1GS</sup>, Demilade Ibiwoye<sup>2</sup>, Muhammad Wajeih<sup>2</sup>, Thaciane Amaral<sup>2</sup>, Renata Gomes<sup>2</sup>, Lisa Bielke<sup>2</sup>

<sup>1</sup>*Prestage Poultry Science Department, North Carolina State University, Raleigh, North Carolina, United States*, <sup>2</sup>*Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States*

### 8:45 AM M38

Effective oral vaccination with *Zea mays*-expressed antigens against *Eimeria maxima*

Jeffery Escobar\*, Richard Sibbel, Tracy Raines

*Mazen Animal Health, Ames, Iowa, United States*

### 9:00 AM M39

Designing and testing PCR primers for *Cochlosoma anatis* detection in commercial turkey poult

Justin Lowery<sup>\*1GS</sup>, Christina S. Sigmon<sup>1</sup>, Katherine Rysdon<sup>1</sup>, Krista Chang<sup>1</sup>, Caiti Heil<sup>2</sup>, Lin L. Walker<sup>1</sup>

<sup>1</sup>*Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States*, <sup>2</sup>*Department of Biological Sciences, North Carolina State University, Raleigh, North Carolina, United States*

### 9:15 AM M40

*Castanea sativa* tannin reduces coccidiosis intestinal lesions in broilers

Eveline Berwanger<sup>1</sup>, Fabrizio Oristanio<sup>\*2</sup>, Neyre N. Shiroma<sup>1</sup>, André N. Mayer<sup>1</sup>, Clarisse Techer<sup>2</sup>

<sup>1</sup>*Technical, Salus Com de Prod. de Saúde e Nutrição Animal S.A., Santo Antônio de Posse, São Paulo, Brazil*, <sup>2</sup>*miXscience, Bruz, France*

### 9:30 AM M41

Environmental Monitoring of the IBV-G1-23 Variant in Uruguayan Poultry Flocks Using the CAPTUS Air Sampling Tool

Martin Masner<sup>\*1</sup>, Luis-Miguel Gomez-Osorio<sup>1</sup>, Andres Pio<sup>1</sup>, Pia Fernandez<sup>1</sup>, Facundo Rocha Calvette<sup>1</sup>, Ignacio González<sup>2,3</sup>, Franco Bazzi<sup>4</sup>, William Serna<sup>1</sup>, Laura Maccio<sup>1</sup>

<sup>1</sup>*metaBIX Biotech, Montevideo, Montevideo, Uruguay*, <sup>2</sup>*Avicola El Campo, Tala, Uruguay*, <sup>3</sup>*Veterinary Faculty, UDELAR, Montevideo, Uruguay*, <sup>4</sup>*3 Arroyos, Canelones, Uruguay*



**9:45 AM M42**

Direct RNA sequencing with the Minion platform enables sequencing of nearly full-length viral RNA reads from *Orthoavulavirus javaense*  
Megan Mears\*<sup>2</sup>, Quentin Read<sup>3</sup>, Abhijeet A. Bakre<sup>1</sup>

<sup>1</sup>Exotic and Emerging Avian Viral Disease Research Unit, USNPRC, Athens, Georgia, United States, <sup>2</sup>Exotic and Emerging Avian Viral Disease Research Unit, USNPRC, Athens, Georgia, United States, <sup>3</sup>USDA, USDA-ARS Southeast Area, Raleigh, North Carolina, United States

**10:00 AM M43**

Development of an assay to detect cytolysin and a presumptive *Enterococcus faecalis* pathogenicity island associated with chicken embryo mortality

Jessica Foote\*, Enid T. McKinley, Claire Podvin, Zachary Zawada, Jen Key, Jodi Delago, Alexandra H. Smith  
Arm & Hammer Animal Nutrition, Church & Dwight, Waukesha, Wisconsin, United States

**10:15 AM Break – Room B409**

## SCAD I

Moderator: Luis Muñoz, Mississippi State University

Room Number: B405

Monday, January 27, 2025

### 10:45 AM M44

The efficacy of inactivated vaccine against H5 clade 2.3.4.4b highly pathogenic influenza virus in turkeys

Jiho Lee\*, Scott Lee, Erica Spackman, Chang-Won Lee

*SERPL, USDA, Athens, Georgia, United States*

### 11:00 AM M45

Immunomodulatory effects of essential oils on the in vivo acute inflammatory responses initiated by intradermal injection of *Salmonella* lipopolysaccharide in broiler chickens under heat stress conditions

Santiago Uribe-Diaz\*<sup>1GS</sup>, Jossie M. Santamaria<sup>1</sup>, Chrysta N. Beck<sup>1</sup>, Andressa S. Stein<sup>1</sup>, Raul Marcon<sup>1</sup>, Alvaro Uribe-Serrano<sup>2</sup>, Jaime A. Angel-Isaza<sup>2</sup>, Guillermo Tellez-Isaias<sup>1</sup>, Billy Hargis<sup>1</sup>, Gisela F. Erf<sup>1</sup>

<sup>1</sup>*Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States*, <sup>2</sup>*Unidad de Innovacion Y Desarrollo Bioteecnologico, Promitec Santander SAS, Bucaramanga, Colombia*

### 11:15 AM M46

Protection efficacy of Infectious laryngotracheitis virus (ILTV) DNA plasmid vaccine formulation expressing viral glycoproteins B, D, and I delivered via eye drop

Roshan Paudel\*<sup>1GS</sup>, Ana C. Zamora<sup>1</sup>, April L. Skipper<sup>1</sup>, David J. Hurley<sup>2</sup>, Lorraine H. Keller<sup>3</sup>, Maricarmen García<sup>1</sup>

<sup>1</sup>*Department of Population Health, University of Georgia, Athens, Georgia, United States*, <sup>2</sup>*Department of Infectious Diseases, University of Georgia, Athens, Georgia, United States*, <sup>3</sup>*MBF Therapeutics Inc., Ambler, Pennsylvania, United States*

### 11:30 AM M47

Using animal challenge models to elucidate the pathogenicity of novel APEC serogroups

Klao Runcharoon\*<sup>GS</sup>, Julia Ienes-Lima, Catherine M. Logue, Yu Yang Tsai

*Population Health, University of Georgia, Athens, Georgia, United States*

### 11:45 AM M48

Effects of dietary high-flavonoid corn (PennHFD1) on performance and pathogen responses in broilers subjected to a necrotic enteritis model  
Vinicius Buiatte\*<sup>1, 5GS</sup>, Mahmoud A. Mahmoud<sup>1</sup>, Katarzyna Miska<sup>2</sup>, Monika Proszkowiec-Weglarz<sup>2</sup>, Ana Fonseca<sup>1, 5</sup>, Darby R. Boontarue<sup>1</sup>, Tyler Lesko<sup>3</sup>, Bryan Panek<sup>3</sup>, Surinder Chopra<sup>3</sup>, Mark Jenkins<sup>4</sup>, Alberto Gino Lorenzoni<sup>1</sup>  
<sup>1</sup>*Department of Animal Science, Pennsylvania State University, University Park, Pennsylvania, United States*, <sup>2</sup>*Animal Biosciences & Biotechnology Laboratory, Beltsville Agricultural Research Center, USDA, Beltsville, Maryland, United States*, <sup>3</sup>*Department of Plant Science, Pennsylvania State University, University Park, Pennsylvania, United States*, <sup>4</sup>*Animal Parasitic Diseases Laboratory, Beltsville Agricultural Research Service, USDA, Beltsville, Maryland, United States*, <sup>5</sup>*One Health Microbiome Center, Huck Institutes of the Life Sciences, Pennsylvania State University, University Park, Pennsylvania, United States*

### 12:00 PM Lunch

## SCAD II

Moderator: Silvia Carnaccini, Iowa State University

Room Number: B405

Monday, January 27, 2025

### 1:00 PM M49

Comparison of Vaccine Takes for Combinations of Mass and GA08 Type IBV Vaccines Applied in a Commercial Hatchery

Brian Jordan\*, Po-Hsin Yu, Kalen Cookson, Daniel Bautista

*Zoetis, Madison, Georgia, United States*

### 1:15 PM M50

Fecal calprotectin for assessing coccidiosis severity in broiler chickens: correlation with oocyst shedding and performance metrics

Mahmoud A. Mahmoud\*<sup>1GS</sup>, Vinicius Buiatte<sup>1</sup>, Craig R. Baumrucker<sup>1</sup>, Dervan Bryan<sup>1</sup>, Mark Jenkins<sup>2</sup>, Alberto Gino Lorenzoni<sup>1</sup>

<sup>1</sup>*Animal Science, Pennsylvania State University, University Park, Pennsylvania, United States*, <sup>2</sup>*Beltsville Agricultural Research Service, Animal Parasitic Diseases Laboratory, Beltsville, Maryland, United States*

### 1:30 PM M51

Assessment of pagP gene function in avian pathogenic *Escherichia coli* pathogenicity using a broiler chick challenge model

Hailey Fugate\*<sup>1GS</sup>, Linan Jia<sup>1</sup>, Xin Ye<sup>1</sup>, Manhong Wang<sup>1</sup>, Christopher Magee<sup>2</sup>, Xue Zhang<sup>3</sup>, Pratima Adhikari<sup>1</sup>, Kelsy Robinson<sup>2</sup>, Li Zhang<sup>1</sup>

<sup>1</sup>*Poultry Science, Mississippi State University, Starkville, Mississippi, United States*, <sup>2</sup>*Poultry Research Unit, USDA-ARS, Mississippi State, Mississippi, United States*, <sup>3</sup>*Animal and Dairy Sciences, Mississippi State University, Mississippi State, Mississippi, United States*

### 1:45 PM M52

*Enterococcus* genus affecting broiler chickens: evolution of an emerging threat

Autumn Gregg\*<sup>GS</sup>, Jay Kay Thornton, Isabella Hannay, Martha Pulido-Landinez

*Poultry Research and Diagnostic Laboratory, College of Veterinary Medicine, Mississippi State University, Pearl, Mississippi, United States*

### 2:00 PM M53

Comparison of B lymphocyte responses in broiler chickens vaccinated with electron beam or formalin inactivated *Staphylococcus aureus*

Ruvindu Perera\*<sup>1GS</sup>, Jossie M. Santamaria<sup>1</sup>, Chrysta N. Beck<sup>1</sup>, Gisela F. Erf<sup>1</sup>, Adnan Alrubaye<sup>1</sup>, Palmy Jesudhasan<sup>2</sup>

<sup>1</sup>*Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States*, <sup>2</sup>*USDA-ARS, University of Arkansas, Fayetteville, Arkansas, United States*

### 2:15 PM M54

Effect of silane quaternary ammonium and hypochlorous acid treatments on microbial contamination in the hatch cabinet environment, enteric colonization at hatch, and 7-day performance in broiler chickens

James Higueta\*<sup>1GS</sup>, Aaron Forga<sup>1</sup>, Diego Cortes<sup>1</sup>, Kasey Matusik<sup>1</sup>, Alexandra Mendoza-Reilley<sup>2</sup>, Ivan Alvarado<sup>2</sup>, Justin Welsh<sup>2</sup>, Faizan Aly<sup>3</sup>, Danielle Graham<sup>1</sup>

<sup>1</sup>*University of Arkansas, Fayetteville, Arkansas, United States*, <sup>2</sup>*Merck Animal Health, Madison, New Jersey, United States*, <sup>3</sup>*Aguair, Marietta, Georgia, United States*

### 2:30 PM M55

Chicken alloantigen systems MHC-B, D, E, and I haplotypes are associated with resistance to coccidiosis

Abhisek Niraula\*<sup>1GS</sup>, Anna Wolc<sup>2,3</sup>, Robert L. Taylor<sup>4</sup>, Janet E. Fulton<sup>2</sup>, Rami A. Dalloul<sup>1</sup>

<sup>1</sup>*Department of Poultry Science, University of Georgia, Athens, Georgia, United States*, <sup>2</sup>*Hy-Line International, Dallas Center, Iowa, United States*, <sup>3</sup>*Department of Animal Science, Iowa State University, Ames, Iowa, United States*, <sup>4</sup>*School of Agriculture and Food Systems, West Virginia University, Morgantown, West Virginia, United States*

**2:45 PM M56**

Genomic insights into Type VI Secretion System in Avian

Pathogenic *Escherichia coli*

Julia Ines-Lima\*<sup>1GS</sup>, Klao M. Runcharoon<sup>1</sup>, Cierra Dunham<sup>1</sup>, Catherine M. Logue<sup>2</sup>

<sup>1</sup>Population Health, University of Georgia, Athens, Georgia, United

States, <sup>2</sup>Population Health, University of Georgia, Athens, Georgia, United States

**3:00 PM M57**

Phylogenetic Analysis of Variant ARV in the US Using Bayesian Markov

Chain Monte Carlo (MCMC) and a Relaxed Molecular Clock Model

Olatunde Oluwayinka\*<sup>1GS</sup>, Sonsiray Alvarez-Narvaez<sup>2</sup>, Steven Conrad<sup>2</sup>, Holly Sellers<sup>1</sup>

<sup>1</sup>Poultry Diagnostic and Research Center, Department of Population Health, University of Georgia, Athens, Georgia, United States, <sup>2</sup>United States

Department of Agriculture, Agricultural Research Service, US National Poultry Research Center, Athens, Georgia, United States

**3:15 PM M58**

Effect of *Ligilactobacillus salivarius* UMNPBX2 cell-free extracts on replication of low pathogenic H4N6 influenza virus

Amritha Ajayan\*<sup>1GS</sup>, Dhananjai Muringattu Prabhakaran<sup>2</sup>, Hamza Javid<sup>1</sup>, Maxim Cheeran<sup>3</sup>, Venkatramana D. Krishna<sup>3</sup>, Anup K. Johny<sup>1</sup>

<sup>1</sup>Animal Science, University of Minnesota, Saint Paul, Minnesota, United

States, <sup>2</sup>Animal Science, University of Minnesota, Saint Paul, Minnesota,

United States, <sup>3</sup>Department of Veterinary Population Medicine, University of Minnesota, Saint Paul, Minnesota, United States

**3:30 PM M59**

Avian Metapneumovirus (aMPV) Serosurveillance of broiler breeder flocks to evaluate exposure and risk in the state of Mississippi

Marcela Arango\*<sup>1,2GS</sup>, Scott Baughman<sup>2,1</sup>, Cindy King<sup>3</sup>, James Watson<sup>3</sup>, Natalie Manginsay<sup>2,1</sup>

<sup>1</sup>Mississippi State University, Pearl, Mississippi, United States, <sup>2</sup>Poultry Research and Diagnostic Laboratory, Pearl, Mississippi, United

States, <sup>3</sup>Mississippi Board of Animal Health, Jackson, Mississippi, United States

**3:45 PM M60**

Case study: Evaluating the use of chlorine as a treatment during an outbreak in two flocks infected with *Campylobacter hepaticus*, the causative agent of spotty liver disease in layer hens

Roel Becerra\*<sup>1GS</sup>, Catherine M. Logue<sup>2</sup>

<sup>1</sup>PDRC, University of Georgia, Athens, Georgia, United States, <sup>2</sup>Population Health, University of Georgia, Athens, Georgia, United States

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

## **Welfare and Behavior I**

Moderator: Rosemary Walzem, Texas A&M University

Room Number: B406

Monday, January 27, 2025

### **7:30 AM M61**

Effects of carotenoid supplementation on performance, egg quality, and antioxidant response in early-laying hens

Maria Alvarenga\*<sup>1GS</sup>, Alexis Clark, Mireille Arguelles-Ramos, Ahmed Ali  
*Animal & Veterinary Science Department, Clemson University, Clemson, South Carolina, United States*

### **7:45 AM M62**

Early-life psychological stress changes cecal microbiota composition and behavior of laying hens

Hari Marasini\*<sup>1GS</sup>, Lexie Luna<sup>1</sup>, Young M. Kwon<sup>2</sup>, Prafulla Regmi<sup>1</sup>

<sup>1</sup>*Department of Poultry Science, University of Georgia, Athens, Georgia, United States*, <sup>2</sup>*Department of Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States*

### **8:00 AM M63**

Isolation in the light, but not dark, reduces brain serotonin activity suggestive of a negative affective state in layer hens

Isabella von Seggern\*<sup>GS</sup>, Gregory S. Fraley

*Animal Sciences, Purdue University, Columbia City, Indiana, United States*

### **8:15 AM M64**

Visual-assisted Autonomous Path Planning and Navigation for a Legged Robot Roaming in Cage-free hen houses

Aravind Mandiga\*<sup>1, 2GS</sup>, Guoming Li<sup>1, 3</sup>, Tianming Liu<sup>2</sup>, Venkat U. Bodempudi<sup>1, 3</sup>, Ramviyas Nattanmai Parasuraman<sup>2, 3</sup>, Ramana M Pidaparti<sup>4</sup>

<sup>1</sup>*Department of Poultry Science, University of Georgia, Athens, Georgia, United States*, <sup>2</sup>*School of Computing, University of Georgia, Athens, Georgia, United States*, <sup>3</sup>*Institute of Artificial Intelligence, University of Georgia, Athens, Georgia, United States*, <sup>4</sup>*College of Engineering, University of Georgia, Athens, Georgia, United States*

### **8:30 AM M65**

Validating RFID technology to identify broiler breeder pullets with high and low water use

Allison D. Weaver\*<sup>1GS</sup>, Suzanne M. Leonard<sup>2</sup>, Sara Orlowski<sup>3</sup>, Lisa Bielke<sup>1</sup>, Ramon D. Malheiros<sup>1</sup>, Allison N. Pullin<sup>1</sup>

<sup>1</sup>*Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States*, <sup>2</sup>*Department of Animal Science, North Carolina State University, Raleigh, North Carolina, United States*, <sup>3</sup>*Department of Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States*

### **8:45 AM M66**

The impact of feeder removal on the post-feeding behaviors of feed restricted broiler breeder pullets at 10 and 15 weeks of age

Mazette Croom\*<sup>1GS</sup>, Courtney Daigle<sup>2</sup>, Rosemary Walzem<sup>1</sup>

<sup>1</sup>*Poultry Science, Texas A&M University, Bryan, Texas, United States*, <sup>2</sup>*Animal Science, Texas A&M University, College Station, Texas, United States*

### **9:00 AM M67**

Influence of light wavelength on the activity and tibia morphology of broilers

Angela Perretti\*<sup>1GS</sup>, Chantel Pennicott<sup>2</sup>, Victor Oyeniran<sup>1</sup>, Jaelen Cherry<sup>1</sup>, Zachary Grider<sup>3</sup>, Alexander Nelson<sup>3</sup>, Shawna Weimer<sup>1</sup>

<sup>1</sup>*Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States*, <sup>2</sup>*Poultry Science, University of Arkansas, Farmington, Arkansas, United States*, <sup>3</sup>*Electrical Engineering and Computer Science, University of Arkansas, Fayetteville, Arkansas, United States*

### **9:15 AM M68**

Enhanced Deep Learning Approaches for Reliable Tracking of Multiple Individual Broilers in Dense Group Settings

Sai Akshitha Reddy Kota, Guoming Li\*, Tongshuai liu, Chongxiao Chen  
*University of Georgia, Athens, Georgia, United States*

**9:30 AM M69**

A user-friendly deep learning-based platform for monitoring animal activity index

Mahtab Saeidifar\*<sup>2,3GS</sup>, Guoming Li<sup>2,3,4</sup>, Lakshmish M. Ramaswamy<sup>1</sup>, Chongxiao Chen<sup>2,4</sup>, Tongshuai Liu<sup>2,5</sup>, Ehsan Asali<sup>2,1</sup>, Venkat U. Bodempudi<sup>2,3</sup><sup>1</sup>*Computer Science, University of Georgia, Athens, Georgia, United States*, <sup>2</sup>*Department of Poultry Science, University of Georgia, Athens, Georgia, United States*, <sup>3</sup>*Institute for Artificial Intelligence, University of Georgia, Athens, Georgia, United States*, <sup>4</sup>*Institute for Integrative Precision Agriculture, University of Georgia, Athens, Georgia, United States*, <sup>5</sup>*College of Animal Science & Technology, Henan University of Animal Husbandry and Economy, Zhengzhou, Henan, China*

**9:45 AM Break – Room B409**

## **Welfare and Behavior II**

Moderator: Dr. Leonie Jacobs, VT

Room Number: B406

Monday, January 27, 2025

### **10:00 AM M70**

Predicting gait scores of individual broilers in later phases of production based on spatial and temporal kinematic features in early stages

Hosna Mohammadilalabadi\*<sup>GS</sup>, Guoming Li, Tongshuai Liu, Venkat U.

Bodempudi, Oluwadamilola M. Oso, Mahtab Saeidifar, Ehsan Asali, Aravind Mandiga, Sai Akshitha Reddy Kota

*University of Georgia, Athens, Georgia, United States*

### **10:15 AM M71**

A novel three-dimensional deep learning approach for auditing gait scores of individual broiler chickens

Ehsan Asali\*<sup>1GS</sup>, Guoming Li<sup>2</sup>, Tongshuai Liu<sup>3</sup>, Chongxiao Chen<sup>2, 6</sup>, Mahtab Saeidifar<sup>4, 2, 5</sup>, Venkat U. Bodempudi<sup>4, 2</sup>, Sai Akshitha Reddy Kota<sup>2, 5</sup>, Oluwadamilola M. Oso<sup>2</sup>, Aravind Mandiga<sup>2, 5</sup>

<sup>1</sup>*Computer Science, University of Georgia, Athens, Georgia, United States*, <sup>2</sup>*Poultry Science, University of Georgia, Athens, Georgia, United States*, <sup>3</sup>*College of Animal Science & Technology, Henan University of Animal Husbandry and Economy, Zhengzhou, China*, <sup>4</sup>*Institute for Artificial Intelligence, University of Georgia, Athens, Georgia, United States*, <sup>5</sup>*School of Computing, University of Georgia, Athens, Georgia, United States*, <sup>6</sup>*Institute for Integrative Precision Agriculture, University of Georgia, Athens, Georgia, United States*

### **10:30 AM M72**

Multifactorial Analysis of Broiler Welfare Indicators Correlated with Individual Body Weight, Litter Moisture Content, Diet, and Litter Type

Oluwadamilola M. Oso\*<sup>1GS</sup>, Guoming Li<sup>2, 3, 6</sup>, Chongxiao Chen<sup>2</sup>, Tongshuai Liu<sup>2</sup>, Venkat Umesh Chandra Bodempudi<sup>3, 2</sup>, Nicolas Mejia-Abaunza<sup>2</sup>, Mahtab Saeidifar<sup>3, 2</sup>, Sai Kota<sup>3, 2</sup>, Muhammad Ali<sup>4</sup>, Catherine Fudge<sup>5</sup>, Ehsan Asali<sup>6, 2</sup>, Aravind Mandiga<sup>6, 2</sup>, Woo Kyun Kim<sup>2</sup>, Prafulla Regmi<sup>2</sup>, Jeanna Wilson<sup>2</sup>, Lilong Chai<sup>2</sup>

<sup>1</sup>*Poultry Science, University of Georgia, Athens, Georgia, United States*, <sup>2</sup>*Department of Poultry Science, University of Georgia, Athens, Georgia, United States*, <sup>3</sup>*Institute for Artificial Intelligence, University of Georgia, Athens, Georgia, United States*, <sup>4</sup>*Poultry Science, University of Georgia, Athens, Georgia, United States*, <sup>5</sup>*Poultry Science, University of Georgia, Athens, Georgia, United States*, <sup>6</sup>*Computer Science, University of Georgia, Athens, Georgia, United States*

### **10:45 AM M73**

Evaluating Broiler Activity index, Stretching and Preening behaviors as Affected by Stocking Density

Shengyu Zhou\*<sup>1GS</sup>, Nasiri Amin<sup>1</sup>, Tanner Thornton<sup>3</sup>, Xiao Yang<sup>2</sup>, Hao Gan<sup>1</sup>, Tom Tabler<sup>1</sup>, Yang Zhao<sup>1</sup>

<sup>1</sup>*University of Tennessee, Knoxville, Knoxville, Tennessee, United States*, <sup>2</sup>*China Agricultural University, Beijing, China*, <sup>3</sup>*Animal Science, University of Tennessee-Knoxville, Knoxville, Tennessee, United States*

### **11:00 AM M74**

Deep Learning Methods for Tracking Activities of Male Birds in Cage-Free Flock

Bidur Paneru\*<sup>GS</sup>, Ramesh B. Bist, Xiao Yang, Anjan Dhungana, Samin Dahal, Lilong Chai

*Poultry Science, University of Georgia, Athens, Georgia, United States*

**11:15 AM M75**

Weight prediction of Broiler chickens using a deep learning framework  
Venkat Umesh Chandra Bodempudi\*<sup>1,2GS</sup>, Guoming Li<sup>2,1,3</sup>, Tongshuai Liu<sup>2</sup>,  
Ehsan Asali<sup>4,2</sup>, Aravind Mandiga<sup>4,2</sup>, Mahtab Saeidifar<sup>1,2</sup>, Sai Akshitha Reddy  
Kota<sup>4,2</sup>, Oluwadamilola M. Oso<sup>2</sup>, Sravan Sai Rahul Nalla<sup>5</sup>

<sup>1</sup>*Institute for Artificial Intelligence, University of Georgia, Athens, Georgia, United States*, <sup>2</sup>*Department of Poultry Science, University of Georgia, Athens, Georgia, United States*, <sup>3</sup>*Institute for Integrative Precision Agriculture, University of Georgia, Athens, Georgia, United States*, <sup>4</sup>*Computer Science, University of Georgia, Athens, Georgia, United States*, <sup>5</sup>*University of Houston, Houston, Texas, United States*

**11:30 AM M76**

Comparison of Drinking Behavior in Water Conversion Birds  
Natalie K. Johnson\*<sup>GS</sup>, Kirsten Shafer, Maricela Maqueda, Rosemary Whittle, Chantel Pennicott, Shawna Weimer, Sara Orlowski  
*Center of Excellence for Poultry Science, University of Arkansas, Springdale, Arkansas, United States*

**11:45 AM M77**

Exploratory analysis of broiler welfare indicators at two U.S. processing plants  
Samantha Vitek\*<sup>GS</sup>, Leonie Jacobs  
*School of Animal Sciences, Virginia Tech, Blacksburg, Virginia, United States*

**12:00 PM Lunch**



## Food Safety I

Moderator: Tomi Obe, University of Arkansas

Room Number: B406

Monday, January 27, 2025

### 1:00 PM M78

Antibiotic alternatives result in a differential abundance of lactic acid bacterial populations and fermentation pathways in *Salmonella* Heidelberg-challenged turkeys, as revealed by shotgun metagenomic sequencing  
Dhananjai Muringattu Prabhakaran\*<sup>1GS</sup>, Divek V.T. Nair<sup>1</sup>, Tim Johnson<sup>2</sup>, Anup K. Johnny<sup>1</sup>

<sup>1</sup>Animal Science, University of Minnesota, Saint Paul, Minnesota, United States, <sup>2</sup>Department of Veterinary and Biomedical Sciences, University of Minnesota, Saint Paul, Minnesota, United States

### 1:15 PM M79

A farm-to-fork approach for controlling *Salmonella* Enteritidis in shell eggs using probiotics and postbiotics

Ragini Reddyvari\*<sup>GS</sup>, Praveen Kosuri, Yuying Ren, Eswari Kanike, Sulthana Humayoon, Mary Anne Amalaradjou

University of Connecticut, Mansfield Center, Connecticut, United States

### 1:30 PM M80

Prevalence of *Salmonella* and *Campylobacter* from retail poultry in Alabama  
Maria V. Baca\*<sup>1UG</sup>, Abigail McConnell<sup>1</sup>, Karla V. Casco<sup>1</sup>, Richard Buhr<sup>2</sup>, Dianna Bourassa<sup>1</sup>

<sup>1</sup>Auburn University, Auburn, Alabama, United States, <sup>2</sup>US National Poultry Research Center, USDA-ARS, Athens, Georgia, United States

### 1:45 PM M81

Microbial assessment and antibiotic susceptibility of isolated pathogens on retail chicken

Eniola Betiku\*<sup>1GS</sup>, Philip G. Crandall<sup>2</sup>, Tomi Obe<sup>1,2</sup>

<sup>1</sup>Department of Poultry science, University of Arkansas System Division of Agriculture, Fayetteville, Arkansas, United States, <sup>2</sup>Department of Food Science, Center for Food Safety, University of Arkansas System Division of Agriculture, Fayetteville, Arkansas, United States

### 2:00 PM M82

Use of pre-harvest *Salmonella* status to effectively drive a directed processing approach that reduces *Salmonella* in broilers carcasses

Marco Reina\*<sup>GS</sup>, David Ayala-Velasteguí, Nikki Shariat

Population Health, University of Georgia, Athens, Georgia, United States

### 2:15 PM M83

Use of fluorescent spectral imaging system to detect *Listeria monocytogenes* biofilm formation on food processing surfaces

Micah T. Black\*<sup>4GS</sup>, JD Grey<sup>4</sup>, Vianca Tashiguano<sup>4</sup>, Cameron Smith<sup>4</sup>, Madison Sirmon<sup>4</sup>, Chinelo Onah-kachiside<sup>4</sup>, Katherine Sierra<sup>4</sup>, Laura Garner<sup>1</sup>, Nicholas McKinnon<sup>2</sup>, Stanislav Sokolov<sup>2</sup>, Fartash Vasefi<sup>2</sup>, Jianwei Qin<sup>3</sup>, Diane Chan<sup>3</sup>, Insuck Baek<sup>3</sup>, Kevin Chao<sup>3</sup>, Moon Kim<sup>3</sup>, Amit Morey<sup>4</sup>

<sup>1</sup>Auburn University, Auburn, Alabama, United States, <sup>2</sup>SafetySpect, Inc., Sherman Oaks, California, United States, <sup>3</sup>USDA-ARS, Beltsville, Maryland, United States, <sup>4</sup>Poultry Science, Auburn University, Auburn, Alabama, United States

### 2:30 PM M84

Ferric Uptake Regulator (Fur) plays a significant role in the survival of *Salmonella* Typhimurium on meat.

Greeshma Bharathan\*<sup>1GS</sup>, Karoll Elizabeth Rodriguez Chinchilla<sup>3</sup>, Hunter Sheffield<sup>1</sup>, Michelle Hayden<sup>1</sup>, Aisha Madi<sup>1</sup>, Richard Buhr<sup>2</sup>, Shabarinath Srikumar<sup>1</sup>

<sup>1</sup>Department of Poultry Science, Auburn University, Auburn, Alabama, United States, <sup>2</sup>USDA, Athens, Georgia, United States, <sup>3</sup>Zamorano, Francisco Morazan, Honduras

**2:45 PM M85**

Synergistic Effects of Polyphenols and Antibiotics Against Multi-Drug Resistant *Salmonella* Typhimurium DT104

Hunter Sheffield\*<sup>1GS</sup>, Greeshma Bharathan<sup>1</sup>, Michelle Hayden<sup>1</sup>, Aisha Madi<sup>1</sup>, Shabarinath Srikumar<sup>1</sup>, Karoll Elizabeth Rodriguez Chinchilla<sup>3</sup>, Richard Buhr<sup>2</sup>

<sup>1</sup>Department of Poultry Science, Auburn University, Auburn, Alabama, United States, <sup>2</sup>US National Poultry Center, Athens, Georgia, United States, <sup>3</sup>Zamorano University, Tegucigalpa, Honduras

**3:00 PM M86**

Protective effects of a killed *Salmonella* ser. Typhimurium vaccine delivered through *In ovo*, Gel or Spray routes in broiler birds

Divyashree Ramalingam\*<sup>2GS</sup>, Ramesh Selvaraj<sup>3</sup>, Mohan Naidu Korada<sup>3</sup>, Parimal Sheth<sup>1</sup>, Praveen Reddy Kasu<sup>3</sup>, Waqas Ishaq<sup>3</sup>

<sup>1</sup>Endovac Animal Health Inc, Columbia, Missouri, United States, <sup>2</sup>Animal Science, University of Georgia, Athens, Georgia, United States, <sup>3</sup>Poultry Science, University of Georgia, Athens, Georgia, United States

**3:15 PM M87**

Effect of peanut skin as an antimicrobial feed additive against *Salmonella* in broilers

Yabaiz Tahir\*<sup>1GS</sup>, Thien Vu<sup>2</sup>, Justin Lowery<sup>1</sup>, Mary Mendoza<sup>1</sup>, Krista Chang<sup>1</sup>, Katherine Rysdon<sup>1</sup>, Demilade Ibiwoye<sup>1</sup>, Christina S. Sigmon<sup>1</sup>, Ondulla T. Toomer<sup>2</sup>, Lin L. Walker<sup>1</sup>

<sup>1</sup>Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States, <sup>2</sup>Food Science and Market Quality & Handling Research Unit, Agricultural Research Service/USDA, Raleigh, North Carolina, United States

**3:30 PM M88**

Effect of organic acid supplementation on *Salmonella* prevalence and growth performance during a challenge model using male broilers

Eva G. Guzman\*<sup>1GS</sup>, Jose I. Vargas<sup>2</sup>, Joseph P. Gulizia<sup>3</sup>, Jose R. Hernandez<sup>4</sup>, Jibely Martinez<sup>6</sup>, Maria J. Brizuela<sup>6</sup>, Matthew Bailey<sup>1</sup>, Ruediger Hauck<sup>1,7</sup>, Dianna Bourassa<sup>5</sup>, Kenneth Macklin<sup>8</sup>, Wilmer J. Pacheco<sup>2</sup>

<sup>1</sup>Poultry Science, Auburn University, Auburn, Alabama, United States, <sup>2</sup>Poultry Science, Auburn University, Auburn, Alabama, United States, <sup>3</sup>Poultry Science, Auburn University, Auburn, Alabama, United States, <sup>4</sup>Poultry Science Department, Auburn University, Auburn, Alabama, United States, <sup>5</sup>Auburn University, Auburn, Alabama, United States, <sup>6</sup>Agricultural and Production Science, Zamorano University, Valle de Yeguaré, Francisco Morazan, Honduras, <sup>7</sup>Department of Pathobiology, Auburn University, Auburn, Alabama, United States, <sup>8</sup>Poultry Science, Mississippi State University, Mississippi State, Mississippi, United States

**3:45 PM M89**

Evaluating the effect of feed sanitizer products on feed mill equipment and its impact on feed microbial reduction

Emily Magee\*<sup>1GS</sup>, Jason Sands<sup>2</sup>, Timothy Boltz<sup>1</sup>

<sup>1</sup>Poultry Science, Mississippi State University, Starkville, Mississippi, United States, <sup>2</sup>Anitox Corporation, Lawrenceville, Georgia, United States

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

## **Processing and Products**

Moderator: Yan L. Campbell, North Carolina State University

Room Number: B407

Monday, January 27, 2025

### **7:30 AM M90**

Advantages of using automated feather sexing system to allow for separate sex rearing on performance on the farm and improved saving at the processing plant

Ali Matloub\*<sup>2</sup>, Liz Turpin<sup>1</sup>

<sup>1</sup>BioProcess, Targan, Raleigh, North Carolina, United States, <sup>2</sup>Sales & Marketing, Targan, Montreal, Quebec, Canada

### **7:45 AM M91**

Dietary supplementation of zinc on growth performance, tissue mineral content, skin and carcass quality of broiler chicken

A.B.M. Khaleduzzaman\*<sup>1</sup>, H.M Salim<sup>1</sup>, Shariful Haque<sup>1</sup>, Zobaidul Kabir<sup>2</sup>, BD Lee<sup>3</sup>

<sup>1</sup>Department of Livestock Services, Director Production, Dhaka, Dhaka, Bangladesh, <sup>2</sup>Livestock Unit, Ministry of Fisheries and Livestock, Dhaka, Bangladesh, <sup>3</sup>Animal Science, Department of Animal Science and Biotechnology, Chungnam, Korea (the Republic of)

### **8:00 AM M92**

Effects of duck breeds on egg functionality through fourteen days of egg storage

Matthew Hughes\*<sup>1UG</sup>, Brigid McCrea<sup>2</sup>, Karla V. Casco<sup>1</sup>, Javier Garcia<sup>3</sup>, Dianna Bourassa<sup>1</sup>

<sup>1</sup>Auburn University, Auburn, Alabama, United States, <sup>2</sup>Alabama Cooperative Extension System, Auburn, Alabama, United States, <sup>3</sup>Egg and Poultry Production Safety Research Unit, USDA-ARS, Athens, Georgia, United States

### **8:15 AM M93**

Evaluating nozzle types and its effects on water consumption in a poultry processing plant

Cameron Smith\*<sup>UG</sup>, Micah T. Black, Amit Morey

Poultry Science, Auburn University, Auburn, Alabama, United States

### **8:30 AM M94**

Effects of broiler genetic strain and diet on growth performance and Wooden Breast incidence

Jorge L. Sandoval\*<sup>1GS</sup>, J. Wesley Rogers<sup>1</sup>, Gerardo A. Abascal-Ponciano<sup>1</sup>, Charles W. Starkey<sup>2</sup>, Jessica D. Starkey<sup>1</sup>

<sup>1</sup>Poultry Science Department, Auburn University, Auburn, Alabama, United States, <sup>2</sup>Scientific and Regulatory Affairs, North American Renderers Association, Alexandria, Virginia, United States

### **8:45 AM M95**

Advanced oxidation processes effectively attenuated *Campylobacter* species individually and in combination with *Salmonella* Typhimurium in contaminated wastewater

Seth O. Adesope\*<sup>1GS</sup>, Mark Calson<sup>2</sup>, Nikolay Barashkov<sup>2</sup>, Casey M. Owens<sup>1</sup>, Tomi Obe<sup>1</sup>

<sup>1</sup>Department of Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States, <sup>2</sup>Micro-Tracers, Inc, San Francisco, California, United States

### **9:00 AM M96**

The effect of silvopasture (vs indoor) environment and broiler breed on meat quality

Jean C. Caceres\*<sup>1GS</sup>, Camila Hammel Sobreira<sup>1</sup>, Afsana Rahaman Munmun<sup>2</sup>, Christina S. Sigmon<sup>1</sup>, Allison N. Pullin<sup>1</sup>, Jesse L. Grimes<sup>1</sup>, Lin L. Walker<sup>1</sup>, Yan L. Campbell<sup>11</sup>

<sup>1</sup>Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States, <sup>2</sup>Food, Bioprocessing & Nutrition Sciences Department, North Carolina State University, Raleigh, North Carolina, United States

## **Metabolism and Nutrition II: General Nutrition**

Moderator: John Boney, Penn State University

Room Number: B407

Monday, January 27, 2025

### **9:15 AM M97**

Impact of feed form and supplementary feeding systems on crop fill and early growth performance of broilers

Shamar T. Simon\*<sup>1UG</sup>, Neketa Hughes<sup>2</sup>, Randy Domer<sup>2</sup>, Doreon Wilson<sup>1</sup>, Colwayne Morris<sup>3</sup>

<sup>1</sup>*Faculty of Agriculture and Forestry, University of Guyana, Georgetown, Guyana*, <sup>2</sup>*Poultry Science Department, University of Auburn, Auburn, Alabama, United States*, <sup>3</sup>*North America Poultry Department, Zinpro Corporation, Eden Prairie, Minnesota, United States*

### **9:30 AM M98**

Ileal amino acid digestibility and relative gene expression of ileal nutrient transporter, and pectoralis protein synthesis and degradation in broiler chickens fed reduced-crude protein diets containing soybean meal, canola meal, or corn dried distiller's grains with solubles under coccidiosis vaccination

June Hyeok Yoon\*<sup>1GS</sup>, Adeleye M. Ajao<sup>1</sup>, Revathi Shamugasundaram<sup>2</sup>, Adelumola Oladeinde<sup>2</sup>, Oluyinka Olukosi<sup>1</sup>

<sup>1</sup>*University of Georgia, Athens, Georgia, United States*, <sup>2</sup>*USDA-ARS, Athens, Georgia, United States*

### **9:45 AM M99**

The effect of low-protein soybean meals with graded inclusion levels of soyhull on nutrient utilization, cecal short-chain fatty acid profile, and jejunal gene expression in broiler chickens challenged with mixed *Eimeria* spp.

Bhargavi Kasireddy\*<sup>1GS</sup>, Iyabo W. Oluseyifunmi<sup>1</sup>, Revathi Shamugasundaram<sup>2</sup>, Adelumola Oladeinde<sup>2</sup>, Oluyinka Olukosi<sup>1</sup>

<sup>1</sup>*Department of Poultry Science, University of Georgia, Athens, Georgia, United States*, <sup>2</sup>*USDA-ARS, Athens, Georgia, United States*

### **10:00 AM Break – Room B409**

## **Metabolism and Nutrition III: General Nutrition**

Moderator: John Boney, Penn State University

Room Number: B407

Monday, January 27, 2025

### **10:15 AM M100**

Age-related energy values of canola meal for broiler chickens determined using the regression method

Olatunde I. Awonyemi\*<sup>GS</sup>, Olayiwola Adeola

*Animal Sciences, Purdue University, West Lafayette, Indiana, United States*

### **10:30 AM M101**

Effect of feed form, energy level, and conditioning temperature on broiler performance, feed wastage, and nutrient digestibility from 1 to 21 days of age

Jose R. Hernandez\*<sup>GS</sup>, Joseph P. Gulizia, Jose I. Vargas, Eva G. Guzman, Samuel J. Rochell, Ruediger Hauck, Wilmer J. Pacheco

*Department of Poultry Science, Auburn University, Auburn, Alabama, United States*

### **10:45 AM M102**

The effect of varying pellet diameters and fines inclusion of growth performance of broilers throughout all phases of growth

Carter D. Minson\*<sup>1GS</sup>, Mason Engnell<sup>1</sup>, Walter Friesen<sup>1</sup>, Diego Lopez<sup>1</sup>, Allison Blomme<sup>1</sup>, Victoria Wilson<sup>1</sup>, Charles Stark<sup>1</sup>, Chad Paulk<sup>1</sup>, Scott Beyer<sup>2</sup>

*<sup>1</sup>Grain Science and Industry, Kansas State University, Manhattan, Kansas, United States, <sup>2</sup>Animal Science and Industry, Kansas State University, Manhattan, Kansas, United States*

### **11:00 AM M103**

Effect of cumulative nutrient intake on body weight, feed conversion ratio, and mortality of broilers raised to 35 d under commercial tropical conditions

Gustavo Quintana\*<sup>1GS</sup>, Edgar O. Oviedo-Rondón<sup>1</sup>, Juan R. Ruiz-Ramirez<sup>2</sup>, Luis C. Bernal-Arango<sup>2</sup>, Gustavo Martinez-Bernal<sup>2</sup>

*<sup>1</sup>Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States, <sup>2</sup>Grupo BIOS Inc, Envigado, Colombia*

### **11:15 AM M104**

Effects of feed form (mash vs. pellets) on turkey hens performance

Luis Giron\*<sup>GS</sup>, Darby R. Boontarue, Mireia Molins, Sophia Bianchi, John Boney

*Animal Science, Pennsylvania State University, University Park, Pennsylvania, United States*

### **11:30 AM M105**

Impact of dietary fiber types and concentrations on jejunal and cecal gene expression in broilers with a subclinical enteric challenge

Rana Waqar Tabish\*<sup>1GS</sup>, Yang Lin<sup>1</sup>, Samuel J. Rochell<sup>1</sup>, Wilmer J. Pacheco<sup>1</sup>, Matthew Bailey<sup>1</sup>, William A. Dozier<sup>1</sup>, Klinton W. McCafferty<sup>2</sup>, Ruediger Hauck<sup>1,3</sup>

*<sup>1</sup>Department of Poultry Science, Auburn University, Auburn, Alabama, United States, <sup>2</sup>USDA-ARS-Poultry Research Unit, Mississippi State, Mississippi, United States, <sup>3</sup>Department of Pathobiology, Auburn University, Auburn, Alabama, United States*

### **11:45 AM M106**

Exploration of the antinutrient variability of corn, wheat, and soybean meal

Caleb M. Marshall\*<sup>1GS</sup>, Virginie Blanvillain<sup>2</sup>, Edgar O. Oviedo-Rondón<sup>1</sup>  
*<sup>1</sup>Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States, <sup>2</sup>AB Vista, Plantation, Florida, United States*

### **12:00 PM Lunch**

## **Metabolism and Nutrition IV: General Nutrition**

Moderator: Kelley Wamsley, Mississippi State University

Room Number: B407

Monday, January 27, 2025

### **1:00 PM M107**

Differentiating energy and amino acids nutritional value from soybean meal from various origins fed to broilers

Ashir F. Atoo\*<sup>1GS</sup>, Crystal Levesque<sup>2</sup>, Jorge Y. Perez-Palencia<sup>1</sup>

<sup>1</sup>*Animal Science, South Dakota State University, Brookings, South Dakota, United States*, <sup>2</sup>*Animal Science, South Dakota State University, Brookings, South Dakota, United States*

### **1:15 PM M108**

Soybean Genotype Amino Acid Selection: Impacts on diet linear programming and broiler performance

Savannah Wells-Crafton\*<sup>GS</sup>, Kenneth B. Nelson, Virginia G. Slick, Elizabeth S. Greene, Michael T. Kidd

*Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States*

### **1:30 PM M109**

Impact of sodium bisulfate feed inclusions on broiler performance and processing metrics

Samantha S. Plocher\*<sup>1GS</sup>, Craig Coufal<sup>2</sup>, Julianna Jespersen<sup>2</sup>, Hudson Thames<sup>1</sup>, Xue Zhang<sup>3</sup>, Kelley Wamsley<sup>1</sup>

<sup>1</sup>*Department of Poultry Science, Mississippi State University, Mississippi State, Mississippi, United States*, <sup>2</sup>*Jones-Hamilton Co., Rock Island, Illinois, United States*, <sup>3</sup>*Animal and Dairy Science Department, Mississippi State University, Mississippi State, Mississippi, United States*

### **1:45 PM M110**

Maximizing 17 to 28 d growth performance of broilers with and without a subclinical necrotic enteritis challenge through corn particle size and feed quality

Jorge Urrutia\*<sup>1GS</sup>, Hudson Thames<sup>1</sup>, Klinton W. McCafferty<sup>3</sup>, Christopher Magee<sup>3</sup>, Wilmer J. Pacheco<sup>2</sup>, Timothy Boltz<sup>1</sup>, Kenneth Macklin<sup>1</sup>, Kelley Wamsley<sup>1</sup>

<sup>1</sup>*Poultry Science, Mississippi State University, Mississippi State, Mississippi, United States*, <sup>2</sup>*Poultry Science, Auburn University, Auburn, Alabama, United States*, <sup>3</sup>*USDA-ARS-Poultry Research Unit, Mississippi State, Mississippi, United States*

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

Moderator: Kelley Wamsley, Mississippi State University

Room Number: B407

Monday, January 27, 2025

### **2:00 PM M111**

Phytase supplementation response in broilers fed different levels of non-phytate phosphorus in the pre-experimental starter period

Vitor Santos Haetinger\*<sup>GS</sup>, Olayiwola Adeola

*Department of Animal Science, Purdue University, West Lafayette, Indiana, United States*

### **2:15 PM M112**

Additivity of phytate-P utilization in broiler diets containing corn, soybean meal, canola meal, or rice bran in the absence or presence of supplemental phytase

Opeadura T. Osunbami\*<sup>1GS</sup>, Carrie L. Walk<sup>2</sup>, Olayiwola Adeola<sup>1</sup>

<sup>1</sup>*Animal sciences, Purdue University, West Lafayette, Indiana, United States*, <sup>2</sup>*AB Vista, Marlborough, Wiltshire, SN8 4AN, United Kingdom*

### **2:30 PM M113**

Evaluation of vitamin D and carotenoid-based nutritional solutions on performance and egg quality in Breeder hens

Patrick Tamatey\*<sup>1GS</sup>, Shelby Corray<sup>2</sup>, Brooke C. Bodle<sup>3</sup>, John Boney<sup>1</sup>, Dervan Bryan<sup>1</sup>

<sup>1</sup>*Animal Science, Penn State, State College, Pennsylvania, United States*, <sup>2</sup>*DSM-Firmenich Nutritional Products, Plainsboro, New Jersey, United States*, <sup>3</sup>*DSM-Firmenich Nutritional Products, Plainsboro, New Jersey, United States*

### **2:45 PM M114**

Niacin and nicotinamide riboside supplementation effects on broiler growth performance and apparent metabolizable energy

Victoria Wilson\*<sup>1GS</sup>, John Gonzalez<sup>2</sup>, Scott Beyer<sup>3</sup>, Haley Otott<sup>1</sup>, Chad Paulk<sup>1</sup>, Carter D. Minson<sup>1</sup>, Mason Engnell<sup>1</sup>, Walter Friesen<sup>1</sup>, Diego Lopez<sup>1</sup>, Allison Blomme<sup>1</sup>

<sup>1</sup>*Grain Science and Industry, Kansas State University, Manhattan, Kansas, United States*, <sup>2</sup>*Animal and Dairy Science, University of Georgia, Athens, Georgia, United States*, <sup>3</sup>*Animal Science and Industries, Kansas State University, Manhattan, Kansas, United States*

### **3:00 PM M115**

Digestible calcium and digestible phosphorus requirements of broilers from hatch to eight days of age

Kean G. Jacobs\*<sup>1,2GS</sup>, Roselina Angel<sup>3</sup>, Christine Jansen Van Rensburg<sup>2</sup>, Kirsty Gibbs<sup>4</sup>, Jamie Fourie<sup>2</sup>, Peter W. Plumstead<sup>1</sup>, Kyle M. Venter<sup>1,2</sup>, Nickki Tillman<sup>5</sup>

<sup>1</sup>*Neuro Livestock Research, Brits, South Africa*, <sup>2</sup>*Department of Animal Science, University of Pretoria, Pretoria, Gauteng, South Africa*, <sup>3</sup>*Department of Animal and Avian Sciences, University of Maryland, College Park, Maryland, United States*, <sup>4</sup>*Danisco Animal Nutrition & Health, IFF, Oegstgeest, Netherlands*, <sup>5</sup>*Nutritional Statistics LLC, Buford, Georgia, United States*

### **3:15 PM M116**

Dietary 25-hydroxyvitamin D3 supplementation improves vitamin D status and protects bone and gut health in broilers challenged with *Eimeria spp*

Nicolas Mejia-Abauza\*<sup>1GS</sup>, Catherine Fudge<sup>1</sup>, Muhammad Ali<sup>1</sup>, Huihui Ma<sup>1</sup>, Venkata Sessa Reddy Choppa<sup>1</sup>, Woo Kyun Kim<sup>1</sup>, Cristiano Bortoluzzi<sup>2</sup>, Estefania Perez-Calvo<sup>2</sup>, Chongxiao Chen<sup>1</sup>

<sup>1</sup>*Department of Poultry Science, University of Georgia, Athens, Georgia, United States*, <sup>2</sup>*dsm-firmenich, College station, Texas, United States*

**3:30 PM M117**

Nutrient digestibility response of male broilers subjected to an enteric challenge and fed diets containing varying limestone particle sizes and calcium concentrations

Joseph P. Gulizia\*<sup>1GS</sup>, Rana Waqar 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>1,3</sup>, Matthew Bailey<sup>1</sup>, William A. Dozier<sup>1</sup>, Kinton W. McCafferty<sup>2</sup>, Wilmer J. Pacheco<sup>1</sup>

<sup>1</sup>Department of Poultry Science, Auburn University, Auburn, Alabama, United States, <sup>2</sup>USDA-ARS-Poultry Research Unit, Mississippi State, Mississippi, United States, <sup>3</sup>Department of Pathobiology, Auburn University, Auburn, Alabama, United States

**3:45 PM M118**

The effects of dietary copper and litter condition on broiler growth performance

Allison Jun Taguchi Kawaoku\*<sup>1GS</sup>, Nicolas Mejia-Abaunza<sup>1</sup>, Catherine Fudge<sup>1</sup>, Muhammad Ali<sup>1</sup>, Huihui Ma<sup>2</sup>, Venkat U. Bodempudi<sup>1</sup>, Tongshuai Liu<sup>3</sup>, Guoming Li<sup>1</sup>, Jinquan Wang<sup>4</sup>, Chongxiao Chen<sup>1</sup>

<sup>1</sup>Department of Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>2</sup>Institute of Animal Husbandry, Henan Academy of Agricultural Sciences, Zhengzhou, China, <sup>3</sup>College of Animal Science & Technology, Henan University of Animal Husbandry and Economy, Zhengzhou, China, <sup>4</sup>Department of Poultry Science, Auburn University, Auburn, Alabama, United States

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



## **Metabolism and Nutrition VI: Amino Acids and Feed Additives**

Moderator: Michael E. Persia, Virginia Tech

Room Number: B408

Monday, January 27, 2025

### **7:15 AM M119**

Determining the importance of non-essential amino acids, histidine, and phenylalanine + tyrosine in broilers provided reduced protein diets

Ruben Kriseldi\*<sup>1</sup>, Marcelo Silva<sup>1</sup>, Alex Corzo<sup>1</sup>, Jason Lee<sup>2</sup>, Roshan Adhikari<sup>2</sup>

<sup>1</sup>Aviagen, Huntsville, Alabama, United States, <sup>2</sup>CJ Bio America, Downers Grove, Illinois, United States

### **7:30 AM M120**

Performance and yield response of male and female Cobb 500 broilers with varying levels of amino acid density

Jason T. Lee\*<sup>1</sup>, Rocky Latham<sup>2</sup>, Roshan Adhikari<sup>1</sup>, Dan Moore<sup>3</sup>

<sup>1</sup>CJ Bio America, Downers Grove, Illinois, United States, <sup>2</sup>Tyson Foods, Springdale, Arkansas, United States, <sup>3</sup>Colorado Quality Research, Wellington, Colorado, United States

### **7:45 AM M121**

Evaluation of direct fed microbials on the performance and eggshell quality of post-peak laying hens

Alyssa M. Lyons\*<sup>1GS</sup>, Hector Leyva-Jimenez<sup>2</sup>, BRIAN DIRKS<sup>2</sup>, Mike E. Persia<sup>1</sup>

<sup>1</sup>School of Animal Sciences, Virginia Tech, Blacksburg, Virginia, United States, <sup>2</sup>United Animal Health, Audubon, Pennsylvania, United States

### **8:00 AM M122**

Effect of dietary supplementation of spray-dried plasma on performance and semen quality in aging broiler breeders

Mário Henrique S. Lopes\*<sup>1GS</sup>, Carlos A. Granghelli<sup>1</sup>, Giovana M. Longhini<sup>1</sup>, Isabela E. Silva<sup>1</sup>, Melany Y. Lovon<sup>1</sup>, Raimundo G. Netto<sup>1</sup>, Luís Rangel<sup>2</sup>, Joy Campbell<sup>2</sup>, Joe Crenshaw<sup>2</sup>, Cristiane S. Araujo<sup>1</sup>, Lucio F. Araujo<sup>1</sup>

<sup>1</sup>Department of Animal Science, University of São Paulo, Pirassununga, São Paulo, Brazil, <sup>2</sup>APC, Ankeny, Iowa, United States

### **8:15 AM M123**

Throughput agents alleviate concerns of manufacturing feed with larger pellet die thicknesses

Lucas E. Knarr\*<sup>1GS</sup>, Kristina M. Bowen<sup>1</sup>, Elizabeth A. Lynch<sup>1</sup>, Emily B. Estanich<sup>1</sup>, Alexis Renner<sup>1</sup>, Jon Ferrel<sup>2</sup>, Joseph S. Moritz<sup>1</sup>

<sup>1</sup>School of Agriculture and Food Systems, West Virginia University, Morgantown, West Virginia, United States, <sup>2</sup>Azomite Mineral Products, Nephi, Utah, United States

### **8:30 AM M124**

Evaluation of botanical feed additives rich in saponins and polyphenols in broilers experiencing immunological and environmental stressors

Laney Froebel\*<sup>1GS</sup>, Mike J. Rincker<sup>2</sup>, Ryan Dilger<sup>1</sup>

<sup>1</sup>University of Illinois, Urbana, Illinois, United States, <sup>2</sup>DPI Global, Porterville, California, United States

### **8:45 AM M125**

Evaluation of a direct-fed microbial on growth performance in birds subjected to ingredient-based dietary stress

Addison Elstner\*<sup>1</sup>, Rosana Hirai<sup>1</sup>, Austin O. Silva<sup>2</sup>, Daniel De Leon<sup>2</sup>, Hector Leyva-Jimenez<sup>3</sup>, BRIAN DIRKS<sup>4</sup>, Yemi Burden<sup>3</sup>, Katherine McCormick<sup>3</sup>, Christopher Bailey<sup>1</sup>, Audrey McElroy<sup>2</sup>

<sup>1</sup>Poultry Science, Texas A&M University, College station, Texas, United States, <sup>2</sup>Poultry Science, Texas A&M University, Bryan, Texas, United States, <sup>3</sup>United Animal Health, Sheridan, Indiana, United States, <sup>4</sup>United Animal Health, Audubon, Pennsylvania, United States

### **9:00 AM M126**

Effects of dietary energy and emulsifier on the performance and energy storage of pullets and young laying hens

Jennifer Blair\*<sup>GS</sup>, Mike E. Persia

Virginia Tech, Blacksburg, Virginia, United States

**9:15 AM M127**

Isolation of probiotic candidates from broiler chicken ceca using culturomics approach

Manhong Wang\*<sup>1GS</sup>, Xin Ye<sup>1</sup>, Hailey Fugate<sup>1</sup>, Chuan-Yu Hsu<sup>2</sup>, Xue Zhang<sup>3</sup>, Peixin Fan<sup>3</sup>, Katie E. Elliott<sup>4</sup>, Pratima Adhikari<sup>1</sup>, Kenneth Macklin<sup>1</sup>, Li Zhang<sup>1</sup>  
<sup>1</sup>Department of Poultry Science, Mississippi State University, Mississippi State, Mississippi, United States, <sup>2</sup>Institute for Genomic, Biocomputing, and Biotechnology, Mississippi State University, Mississippi State, Mississippi, United States, <sup>3</sup>Department of Animal and Dairy Science, Mississippi State University, Mississippi State, Mississippi, United States, <sup>4</sup>Agriculture Research Service, Poultry Research Unit, USDA, Mississippi State, Mississippi, United States

**9:30 AM M128**

Assessing the role of natural feed additives in shaping the broiler environmental microbiome

Ana Fonseca\*<sup>1, 5GS</sup>, Sophia Kenney<sup>1</sup>, Stephanie Bierly<sup>2</sup>, Jennine Lection<sup>3</sup>, Samantha Seibel<sup>4</sup>, Joshua Wolff<sup>6</sup>, John Boney<sup>1</sup>, Erika Ganda<sup>1, 4</sup>  
<sup>1</sup>Animal Science, Pennsylvania State University, University Park, Pennsylvania, United States, <sup>2</sup>Novagene, Centre Hall, Pennsylvania, United States, <sup>3</sup>College of Veterinary Medicine, North Carolina State University, Raleigh, North Carolina, United States, <sup>4</sup>Huck Life Sciences, Pennsylvania State University, University Park, Pennsylvania, United States, <sup>5</sup>Microbiome Sciences, Huck Life Sciences, University Park, Pennsylvania, United States, <sup>6</sup>Drexel University, Philadelphia, Pennsylvania, United States

**9:45 AM M129**

Effect of protected organic acids supplementation on growth performance, gut Integrity, and immune response in broilers challenged with necrotic enteritis

Hanseon Ko\*<sup>1GS</sup>, Jihwan Lee<sup>1</sup>, Hemanth Reddy Katha<sup>1</sup>, Ishwari Gyawali<sup>1</sup>, Kwang Young Lee<sup>2</sup>, Woo Kyun Kim<sup>1</sup>  
<sup>1</sup>Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>2</sup>Morningbio, Cheonan, Chungnam, Korea (the Republic of)

**10:00 AM M130**

Evaluation of different Cu sources and dietary inclusion levels on growth performance and Cu absorption in broilers challenged with coccidiosis

Austin O. Silva\*<sup>1GS</sup>, Rosana Hirai<sup>1</sup>, Addison Elstner<sup>1</sup>, Kasey E. Young<sup>1</sup>, Abigail Flores<sup>1</sup>, Audrey McElroy<sup>1</sup>, Bob Buresh<sup>2</sup>, Melanie Roux<sup>2</sup>  
<sup>1</sup>Poultry Science, Texas A&M University, College Station, Texas, United States, <sup>2</sup>Novus International, Inc, Chesterfield, Missouri, United States

**10:15 AM Break – Room B409**

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

Moderator: Frances Yan, Novus International Inc.

Room Number: B408

Monday, January 27, 2025

### **10:30 AM M131**

Comparing traditional forms of supplemental copper to a monovalent copper on bacteria control

Alessandra Rigo Monteiro<sup>\*1</sup>, Wilfried Vahjen<sup>2</sup>, Yron Manaig<sup>1</sup>, Ian Cockshott<sup>1</sup>

<sup>1</sup>*Animine Precision Minerals, Annecy, France*, <sup>2</sup>*Freie Universität Berlin, Berlin, Germany*

### **10:45 AM M132**

Evaluating the bioavailability of Zinc Glycinate and Zinc Amino Acid hydrate organic trace minerals relative to zinc sulfate based on weight gain and Zinc content in tibia ash of 22-day-old broilers fed semi-purified diets

Mohamad Mortada<sup>\*1</sup>, Andrea Hanson<sup>1</sup>, Jose Charal<sup>1</sup>, Daniel Jones<sup>1</sup>, Matthew Deeker<sup>1</sup>, Kelsey Frank<sup>1</sup>, Sierra Kolan<sup>1</sup>, Rachel Proctor<sup>1</sup>, Taylor Thoele<sup>1</sup>, Safat Shoeb<sup>1</sup>, Dawn Buscheck<sup>1</sup>, Jason Hickman<sup>1</sup>, Catherine Ionescu<sup>2</sup>

<sup>1</sup>*ADM Animal Nutrition, Decatur, Illinois, United States*, <sup>2</sup>*ADM International Sarl, Rolle, Vaud, Switzerland*

### **11:00 AM M133**

Effect of feeding calcium pidolate (Calpid®) on productive performance, economic evaluations and litter quality in broilers fed reduced calcium and phosphorus diets

AbdelRahman Y. Abdelhady<sup>\*1,2</sup>, Abdelhacib Kihal<sup>1</sup>, Salah A. El-Safty<sup>2</sup>, Ahmed Radwan<sup>1</sup>, Sergio Merinero<sup>3</sup>, M. Puyalto<sup>1</sup>, J J. Mallo<sup>1</sup>

<sup>1</sup>*Norel S.A., Madrid, Spain*, <sup>2</sup>*Poultry Production Department, Faculty of Agriculture, Ain Shams University, Cairo, Egypt*, <sup>3</sup>*Nuvet Agriservices S.L.U., Madrid, Spain*

### **11:15 AM M134**

Evaluation of copper source and dose on phytase efficacy in young broilers  
Kyle M. Venter<sup>\*1</sup>, Peter W. Plumstead<sup>1</sup>, Alessandra R. Monteiro<sup>2</sup>, Jamie Fourie<sup>1</sup>

<sup>1</sup>*Neuro Livestock Research, Brits, South Africa*, <sup>2</sup>*Animine Precision Minerals, Annecy, France*

### **11:30 AM M135**

A meta-analysis of copper source and level effects on growth performance of broiler chickens

Abidemi Adekoya, Eric Myers, Gabriela Cardoso, Frances Yan<sup>\*</sup>  
*Novus International Inc., Chesterfield, Missouri, United States*

### **11:45 AM M136**

Effects of varying digestible amino acid densities on the growth performance of Cobb 500 x MX and Ross 708 x YP broiler chickens

Tanner Wise<sup>\*1</sup>, Logan Erb<sup>1</sup>, Corey A. Johnson<sup>1</sup>, Anthony D. Quant<sup>1</sup>, Elizabeth J. Miller<sup>1</sup>, Nickki Tillman<sup>2</sup>

<sup>1</sup>*Nutrition, Kalmbach Nutritional Services, Upper Sandusky, Ohio, United States*, <sup>2</sup>*Nutritional Statistics LLC, Buford, Georgia, United States*

### **12:00 PM Lunch**

## **Metabolism and Nutrition VIII: Amino Acids and Enzymes**

Moderator: Pratima Adhikari, Mississippi State University

Room Number: B408

Monday, January 27, 2025

### **1:00 PM M137**

The determination of gross energy and total essential amino acid content in soybean meal and soy protein concentrates and isolates by near-infrared reflectance spectroscopy

Dylan Moss\*<sup>1GS</sup>, Thomas Jones<sup>2</sup>, Adam J. Davis<sup>1</sup>

<sup>1</sup>*Poultry Science, University of Georgia, Athens, Georgia, United States*, <sup>2</sup>*Poultry Science, University of Georgia, Athens, Georgia, United States*

### **1:15 PM M138**

Evaluation of interaction effects of various levels of energy and amino acid density in the finisher phase (29-42d) on Ross-708 broiler performance and carcass yield

Muhammad Ali\*<sup>1GS</sup>, Catherine Fudge<sup>1</sup>, Nicolas Mejia-Abaunza<sup>1</sup>, Alex Corzo<sup>2</sup>, Ruben Kriseldi<sup>2</sup>, Roshan Adhikari<sup>3</sup>, Chongxiao Chen<sup>1</sup>

<sup>1</sup>*Poultry Science, University of Georgia, Athens, Georgia, United States*, <sup>2</sup>*Aviagen, Huntsville, Alabama, United States*, <sup>3</sup>*CJ Bio America, Downers Grove, Illinois, United States*

### **1:30 PM M139**

Conditioning above 70°C and Pelleting Corn and Soybean Meal-based Diets Containing Under Processed Soybean Meal can Alleviate the Effects of Antinutritional Factors

Reuben Adejumo\*<sup>1GS</sup>, Kristina M. Bowen<sup>2</sup>, Lucas E. Knarr<sup>1</sup>, Elizabeth A. Lynch<sup>1</sup>, Emily B. Estanich<sup>1</sup>, Alexis Renner<sup>1</sup>, Taylor Waugerman<sup>1</sup>, Hari B. Krishnan<sup>3</sup>, Joseph S. Moritz<sup>1</sup>

<sup>1</sup>*Division of Animal and Nutritional Sciences, West Virginia University, Morgantown, West Virginia, United States*, <sup>2</sup>*Egg innovations, Warsaw, Indiana, United States*, <sup>3</sup>*Plant Genetics Research Unit, USDA-ARS, University of Missouri, Columbia, Missouri, United States*

### **1:45 PM M140**

Utilization of near-infrared reflectance spectroscopy to predict the digestible essential amino acid content of mechanically and solvent-extracted soybean meal

Thomas Jones\*<sup>GS</sup>, Coleman Hatmaker, Chongxiao Chen, Adam J. Davis  
*Poultry Science, University of Georgia, Athens, Georgia, United States*

### **2:00 PM M141**

Varying branched-chain amino acid and tryptophan ratios in corn and soybean meal-based diets influences 0-28d turkey poult performance, blood plasma serotonin concentration, relative immune organ weight, and tibia mineralization

Emily B. Estanich\*<sup>1GS</sup>, Kristina M. Bowen<sup>1</sup>, Lucas E. Knarr<sup>1</sup>, Elizabeth A. Lynch<sup>1</sup>, Sally Noll<sup>3</sup>, Arturo Garcia-Morales<sup>2</sup>, Joseph S. Moritz<sup>1</sup>

<sup>1</sup>*School of Agriculture and Food Systems, West Virginia University, Morgantown, West Virginia, United States*, <sup>2</sup>*Butterball, LLC, Goldsboro, North Carolina, United States*, <sup>3</sup>*Department of Animal Science, University of Minnesota, St. Paul, Minnesota, United States*

### **2:15 PM M142**

Effects of high and moderate amino acid density diets in Cobb 500 male broilers

Virginia G. Slick\*<sup>GS</sup>, Savannah Wells-Crafton, David Reynolds, Michael T. Kidd

*Poultry Science, University of Arkansas, Paragould, Arkansas, United States*

### **2:30 PM M143**

Understanding the branched-chain amino acid interactions on bone morphology of pullets (6-12 weeks of age)

Charis A. Waters\*<sup>1GS</sup>, Roshan Adhikari<sup>2</sup>, Jason T. Lee<sup>2</sup>, Deependra Paneru<sup>3</sup>, Woo Kyun Kim<sup>3</sup>, Ruben Kriseldi<sup>4</sup>, Michael Elliot<sup>5</sup>, Li Zhang<sup>1</sup>, Kelley Wamsley<sup>1</sup>, Pratima Adhikari<sup>1</sup>

<sup>1</sup>Department of Poultry Science, Mississippi State University, Mississippi State, Mississippi, United States, <sup>2</sup>CJ Bio America, Downers Grove, Illinois, United States, <sup>3</sup>Department of Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>4</sup>Aviagen, Huntsville, Alabama, United States, <sup>5</sup>A&E Nutrition Services, LLC, Lititz, Pennsylvania, United States

### **2:45 PM M144**

Dietary arginine responses of Ross 708 broilers subjected to enteric challenge with *Eimeria* spp. and *Clostridium perfringens*

Annalise G. Anderson\*<sup>1GS</sup>, Jason T. Lee<sup>2</sup>, Roshan Adhikari<sup>2</sup>, Ruediger Hauck<sup>1,3</sup>, Samuel J. Rochell<sup>1</sup>

<sup>1</sup>Department of Poultry Science, Auburn University, Auburn, Alabama, United States, <sup>2</sup>CJ America, Inc., Downers Grove, Illinois, United States, <sup>3</sup>Department of Pathobiology, Auburn University, Auburn, Alabama, United States

### **3:00 PM M145**

Commercial phytase products varied in efficacy in 0.22% non-phytate phosphorus corn and soybean meal starter diets but were ineffective in 0.13% non-phytate phosphorous diets

Elizabeth A. Lynch\*<sup>1GS</sup>, Kristina M. Bowen<sup>1</sup>, Lucas E. Knarr<sup>1</sup>, Emily B. Estanich<sup>2</sup>, Joseph S. Moritz<sup>1</sup>

<sup>1</sup>School of Agriculture and Food Systems, West Virginia University, Morgantown, West Virginia, United States, <sup>2</sup>Division of Animal and Nutritional Sciences, West Virginia University, Morgantown, West Virginia, United States

### **3:15 PM M146**

Reduction of ribonucleotide reductase subunit RRM2 potentially impairs gut function in broilers exhibiting the woody breast condition

Majid Shakeri\*, Elizabeth Ziabtchenko, Janghan Choi, Caitlin Harris, Richard Buhr, Trevor Mitchell, Byungwhi Kong, Hong Zhuang, Brian Bowker  
USDA-ARS, U.S. National Poultry Research Center, Athens, Georgia, United States

### **3:30 PM M147**

Growth performance and immune response of young tom turkeys to diets containing different doses of an endo-1,4- $\beta$ -D-mannanase.

Adebayo Sokale\*<sup>1</sup>, M Baxter<sup>2</sup>, Sami Dridi<sup>3</sup>, A. Fickler<sup>4</sup>

<sup>1</sup>BASF Corporation, Florham Park, New Jersey, United States, <sup>2</sup>Ozark Avian Research, Fayetteville, Arkansas, United States, <sup>3</sup>Department of Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States, <sup>4</sup>BASF SE, Ludwigshafen, Germany

### **3:45 PM M148**

The effects of mannanase inclusion in corn-soybean meal-based diets on the performance of laying hens

Rosana Maia\*<sup>1</sup>, Michele Bernardino<sup>2</sup>, Edney P. da Silva<sup>2</sup>, Rita P. Brito Vieira<sup>2</sup>, Rodrigo K. Messias<sup>1</sup>, A. Fickler<sup>1</sup>

<sup>1</sup>BASF, Campinas, SP, Brazil, <sup>2</sup>UNESP, Jaboticabal, Brazil

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

## **Metabolism and Nutrition IX: Feed Additives**

Moderator: Theresia Lavergne, Natural Biologics Inc. and Cody Flores, Devenish Nutrition LLC

Room Number: B404

Tuesday, January 28, 2025

### **7:00 AM T149**

Effect of organic acids in drinking water on gastrointestinal pH and mesophilic aerobic counts in broiler chickens

Mariana Ornaghi\*<sup>1</sup>, Caio Tellini<sup>1</sup>, Carla Caliar<sup>2</sup>, Carlos Benito<sup>2</sup>, Jhessica Lang<sup>1</sup>, Jovanir Fernandes<sup>2</sup>

<sup>1</sup>Research and Development, Safeeds, Cascavel, Paraná, Brazil, <sup>2</sup>Universidade Federal do Paraná, Palotina, Brazil

### **7:15 AM T150**

Efficacy of double-buffered sodium butyrate supplementation on broiler performance, foot pad dermatitis and intestinal histomorphology

Bernardo F. Iglesias<sup>3,4</sup>, Maria Viviana Charriere<sup>3</sup>, Virginia Fain Binda<sup>3</sup>, Silvina Pinto<sup>5</sup>, Clemence Marecaille<sup>2</sup>, Julian E. Melo\*<sup>1,2</sup>

<sup>1</sup>Tecnología, Universidad Nacional de Luján, Escobar, Buenos Aires, Argentina, <sup>2</sup>Dietaxion SAS, Le Loroux-Bottereau, France, <sup>3</sup>Sección Avicultura, EEA Pergamino, Instituto Nacional de Tecnología Agropecuaria (INTA), Pergamino, Buenos Aires, Argentina, <sup>4</sup>Producción Animal, UNNOBA, Pergamino, Buenos Aires, Argentina, <sup>5</sup>UBA, Buenos Aires, Argentina

### **7:30 AM T151**

Use of fructooligosaccharides as functional carbohydrates in the modulation of microbiota and intestinal health of broiler chickens

Jaime A. Angel-Isaza\*<sup>1,2</sup>, Alvaro Uribe-Serrano<sup>1</sup>, Blanca C. Martinez<sup>1</sup>, Loufrantz Parra-Mendez<sup>1</sup>, Jaime E. Parra-Suescun<sup>2</sup>

<sup>1</sup>Unidad De Innovacion Y Desarrollo Biotecnologico, Promitec Santander SAS, Bucaramanga, Colombia, <sup>2</sup>Universidad Nacional de Colombia Sede Medellín, Medellín, Colombia

### **7:45 AM T152**

The effect of natural compounds on growth performance and necrotic enteritis challenge mitigation in 1-to-28-day old broiler chicks

Theresia Lavergne\*, Carl Jones, Charlie Elrod

Natural Biologics, Inc., Newfield, New York, United States

### **8:00 AM T153**

Mixtures of short- and medium-chain fatty acid-based products improve the performance of Enterococcus-challenged broilers via distinct mechanisms

Nicholas P. Evans\*<sup>1</sup>, Ariel Bergeron<sup>1</sup>, Olga Lemâle<sup>3</sup>, Tim Goossens<sup>2</sup>, Rob Shirley<sup>1</sup>

<sup>1</sup>Adisseo, Alpharetta, Georgia, United States, <sup>2</sup>Adisseo, Sint-Niklaas, Belgium, <sup>3</sup>Adisseo, Raamsdonksveer, Netherlands

### **8:15 AM T154**

Effect of a triple-strain Bacillus-based probiotic on performance of commercial broilers challenged with *Enterococcus cecorum*

Antoine Meuter\*<sup>1</sup>, Steve Lerner<sup>2</sup>, Meghan Schwartz<sup>2</sup>, Nima Emami<sup>2</sup>

<sup>1</sup>Nononesis, Lyngby, Denmark, <sup>2</sup>Novonesis, Milwaukee, Wisconsin, United States

### **8:30 AM T155**

The effects of Microsa<sup>®</sup> on the growth performance of Ross 308 x Hubbard M99 straight-run broilers in a 43-day production period

Maria T. Terra-Long\*<sup>1</sup>, Alain Riggi<sup>1</sup>, Joe Loughmiller<sup>1</sup>, Logan Erb<sup>2</sup>

<sup>1</sup>Phileo by Lesaffre, Opelika, Alabama, United States, <sup>2</sup>Kalmbach Nutritional Services, Upper Sandusky, Ohio, United States

### **8:45 AM T156**

Deoxynivalenol affects gut morphology and liver oxidative stress in broilers: the effect of an algae-clay detoxifier

Marie Gallissot\*<sup>1</sup>, Maria Angeles Rodriguez<sup>1</sup>, Regiane Santos<sup>2</sup>

<sup>1</sup>OLMIX S.A., Brehan, France, <sup>2</sup>Schothorst Feed Research, Lelystad, Netherlands

**9:00 AM T157**

Use of Diatom Nat for preventing intestinal challenges in broiler chickens

David Díez\*<sup>1</sup>, Anna Tesouro<sup>1</sup>, Connie Gallardo<sup>2</sup>, Roger Palacin<sup>1</sup>

<sup>1</sup>Biovet S.A., Constanti, Tarragona, Spain, <sup>2</sup>Universidad Científica del Sur, Lima, Peru

**9:15 AM T158**

Effects of a proprietary mycotoxin binder, on body weight, feed conversion, and mortality of Ross 708 and Cobb 500 broilers in the absence of increased prevalence of mycotoxins

Cody Flores\*, Shameer Rasheed, Mark LaVorgna, Mahmoud Masadeh, Mike Blair, Gary Reznik, Kristy Dorton

*Devenish Nutrition, Fairmont, Minnesota, United States*

**9:30 AM T159**

Effect of Fytera Perform on Performance and Health of Commercial Broilers with and without an Ionophore Program

Karlinton Flores\*<sup>1</sup>, Dan Moore<sup>2</sup>, Marcos Rostagno<sup>1</sup>

<sup>1</sup>Selko, Raleigh, North Carolina, United States, <sup>2</sup>Colorado Quality Research, Wellington, Colorado, United States

**9:45 AM T160**

Preliminary evaluations of a combination of postbiotics and phytochemicals to support mitigating the impact of histomoniasis in turkeys

Megan Koppen\*<sup>1</sup>, Manuel Da Costa<sup>1</sup>, Maci Oelschlager<sup>1</sup>, Danielle Graham<sup>2</sup>, Aaron Forga<sup>2</sup>, Benjamin W. Parsons<sup>2</sup>, Lisa Bielke<sup>3</sup>, Philip Yeboah<sup>3</sup>, Thaciane Amaral<sup>3</sup>, Demilade Ibiwoye<sup>3</sup>

<sup>1</sup>Cargill Animal Nutrition, Rockingham, Virginia, United States, <sup>2</sup>Division of Agriculture, University of Arkansas, Fayetteville, Arkansas, United States, <sup>3</sup>Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States

**10:00 AM T161**

Effect of combining phytochemical feed solutions with free and mono-, di- and triglycerides of short and medium-chain fatty acids on production performance in broilers

Manu De Laet\*, Manuel Da Costa, Caroline Donaldson, Yann Fournis, Roberto Montanhini Neto

*Cargill Animal Nutrition, Cargill, Mechelen, Belgium*

**10:15 AM T162**

Anti-inflammatory and pro-growth immunometabolic response to phytochemical feed additive in the small intestine of the broiler chicken

Ryan Arsenault\*<sup>1</sup>, Famatta Perry<sup>2</sup>, Casey Johnson<sup>1</sup>, Meghan Schwartz<sup>3</sup>, Ellen Davis<sup>3</sup>, Stacie Crowder<sup>3</sup>

<sup>1</sup>Food and Feed Safety Research Unit, USDA ARS, College Station, Texas, United States, <sup>2</sup>Animal and Food Sciences, University of Delaware, Newark, Delaware, United States, <sup>3</sup>Fortiva, Arden Hills, Minnesota, United States

**10:30 AM T163**

Effect of a blend of phytochemical compounds on productivity and environmental impact of chicken meat in the US: meta-analysis and life cycle assessment

Clémentine Oguey\*<sup>1</sup>, Janjoris Van Diepen<sup>2</sup>

<sup>1</sup>ADM International Sarl, Rolle, Switzerland, <sup>2</sup>Mérieux NutriSciences | Blonk, Washington, District of Columbia, United States

**10:45 AM T164**

Combination of a postbiotic and phytochemical supports broiler performance across all feeding phases

Vivek Kuttappan\*, Yann Fournis, S. Ali Naqvi, Courtney Clemons

*Cargill, Inc., Wayzata, Minnesota, United States*

**11:00 AM Milton L. Dendy Keynote Lecture**

Moderator: Silvia Carnaccini, Iowa State University

Room Number: B405

The History of Our Scientific Societies and the US Broiler Industry

Joseph Giambrone\*

*Poultry Science, Auburn University, Auburn, Alabama, United States*

**12:00 PM SCAD Business Meeting**

President: Silvia Carnaccini

Room Number: B405

**12:00 PM SPSS Business Meeting**

President: Roshan Adhikari

Room Number: B407



### SCAD III

Moderator: Jossie M. Santamaria, University of Arkansas

Room Number: B405

Tuesday, January 28, 2025

#### 7:45 AM T165

Development and characterization of *in vitro* chicken lung organoids and modeling of H5 avian influenza virus infection

Hannah Nicholson\*<sup>1</sup>, Christopher Zdyrski<sup>1</sup>, Michael Catucci<sup>1</sup>, Bryan J. Melvin<sup>1</sup>, Lisa J. Stabler<sup>2</sup>, Mohamed Elbadway<sup>1</sup>, Megan P. Corbett<sup>1</sup>, Eugene Douglass<sup>3</sup>, Rebecca L. Poulson<sup>2</sup>, Jonathan P. Mochel<sup>1</sup>, Karin Allenspach<sup>1</sup>, Silvia Carnaccini<sup>4</sup>

<sup>1</sup>CVM, Precision One Health, Athens, Georgia, United States, <sup>2</sup>CVM, Population Health, Athens, Georgia, United States, <sup>3</sup>Institute of Bioinformatics, Pharmaceutical and Biomedical Sciences, Athens, Georgia, United States, <sup>4</sup>Population Health, University of Georgia, Athens, Georgia, United States

#### 8:00 AM T166

The growing feather pulp as a dermal test site in turkeys: Insights from the early acute inflammatory response to lipopolysaccharide

Delaney F. Roberts\*<sup>UG</sup>, Jossie M. Santamaria, Aaron Forga, Chrysta N. Beck, Danielle Graham, Gisela F. Erf

Center of Excellence for Poultry Science, University of Arkansas System Division of Agriculture, University of Arkansas, Fayetteville, Arkansas, United States

#### 8:15 AM T167

Vaccine-based approach to control *Campylobacter hepaticus* in a challenge study

Catherine M. Logue\*, Roel Becerra, Julia Ienes-Lima, Klao M. Runcharoon, Yu Yang Tsai

Population Health, University of Georgia, Athens, Georgia, United States

#### 8:30 AM T168

*Enterococcus cecorum* Litter Challenge Model with or without a Litter Acidifier

Matthew K. Jones\*<sup>1</sup>, Charles Hofacre<sup>1</sup>, Virginia Baxter<sup>1</sup>, M M. Suyemoto<sup>2</sup>, Roy Berghaus<sup>3</sup>, Juan Suarez<sup>4</sup>, Craig Coufal<sup>4</sup>

<sup>1</sup>Southern Poultry Research Group, Inc., Watkinsville, Georgia, United States, <sup>2</sup>Population Health and Pathobiology, College of Veterinary Medicine, North Carolina State University, Raleigh, North Carolina, United States, <sup>3</sup>Department of Population Health, College of Veterinary Medicine, University of Georgia, Athens, Georgia, United States, <sup>4</sup>Jones-Hamilton Co., Walbridge, Ohio, United States

#### 8:45 AM T169

Did Raised Without Antibiotics programs change field levels of Ionophore anticoccidial resistance?

Greg Mathis\*, Brett Lumpkins

Southern Poultry Feed & Research, Inc., Athens, Georgia, United States

#### 9:00 AM T170

Prevention of Necrotic Enteritis using Bacteriophage Administered in Pelleted Broiler Feed

Charles Hofacre\*<sup>1</sup>, Matthew K. Jones<sup>1</sup>, Joseph Brown<sup>2</sup>, Joseph Edwards<sup>2</sup>, Ellen Denness<sup>2</sup>

<sup>1</sup>Southern Poultry Research Group, Inc., Watkinsville, Georgia, United States, <sup>2</sup>Aparon Ltd., Lincoln, United Kingdom

#### 9:15 AM T171

Study investigating impact of AL2 challenge at different ages on the antibody response to a killed SE vaccination and the sparing effect of rHVT-IBD vaccine on antibody titer suppression

Kalen Cookson\*, John Dickson, Jon Schaeffer  
Zoetis, Lawrenceville, Georgia, United States

**9:30 AM T172**

Comparative Genomics to Identify *Mycoplasma synoviae* pathotypes  
Eniope B. Oluwayinka\*, Naola Ferguson-Noel  
*Population Health, University of Georgia, Athens, Georgia, United States*

**9:45 AM T173**

Individual, targeted vaccination at the hatchery to improve vaccine take and decrease reliance on spread on the farm

Liz Turpin\*

*BioProcess, TARGAN, Raleigh, North Carolina, United States*

**10:00 AM T174**

Secondary immune response profiles to electron beam- or formalin-inactivated *Salmonella* vaccines in egg-type pullets: immunogenic differences

Jossie M. Santamaria\*<sup>1</sup>, Chrysta N. Beck<sup>1</sup>, Ruvindu Perera<sup>1</sup>, Palmy Jesudhasan<sup>2</sup>, Gisela F. Erf<sup>1</sup>

<sup>1</sup>*Center of Excellence for Poultry Science, University of Arkansas System Division of Agriculture, Fayetteville, Arkansas, United States*, <sup>2</sup>*Poultry Production and Product Safety Research Unit, USDA, Fayetteville, Arkansas, United States*

**10:15 AM T175**

Effect of a Postbiotic Containing Saponin on the Severity of Avian Pathogenic *Escherichia coli* (APEC) Serotype O78 Infection in a 10 Week Layer Pullet Challenge Model

Charles Hofacre\*<sup>1</sup>, Evan Chaney<sup>2</sup>, Manuel Da Costa<sup>2</sup>, Jean Oliveria<sup>4</sup>, Vivek Kuttappan<sup>3</sup>, Maci Oelschlager<sup>5</sup>, Matthew K. Jones<sup>6</sup>

<sup>1</sup>*Southern Poultry Research Group, Inc., Watkinsville, Georgia, United States*, <sup>2</sup>*Cargill Micronutrition & Health Solutions, Wayzata, Minnesota, United States*, <sup>3</sup>*Cargill, Inc., Wayzata, Minnesota, United States*, <sup>4</sup>*Cargill R&D Centre Europe, Vilvoorde, Belgium*, <sup>5</sup>*Cargill Animal Nutrition, Savoy, Illinois, United States*, <sup>6</sup>*University of Georgia, Nicholson, Georgia, United States*

**10:30 AM T176**

Bacterial phenotypic plasticity could explain adaptation of *Enterococcus cecorum* to broiler chickens and the rising of a severe systemic disease  
Martha Pulido-Landinez\*

*PRDL, Mississippi State University, Pearl, Mississippi, United States*

**11:00 AM Milton L. Dendy Keynote Lecture**

Moderator: Silvia Carnaccini, Iowa State University

Room Number: B405

The History of Our Scientific Societies and the US Broiler Industry

Joseph Giambrone\*

*Poultry Science, Auburn University, Auburn, Alabama, United States*

**12:00 PM SCAD Business Meeting**

President: Silvia Carnaccini

Room Number: B405

**12:00 PM SPSS Business Meeting**

President: Roshan Adhikari

Room Number: B407

## **Metabolism and Nutrition X: Feed Additives**

Moderator: Midian Nascimento dos Santos, Trouw Nutrition and Adebayo Sokale, BASF

Room Number: B406

Tuesday, January 28, 2025

### **7:00 AM T177**

Black soldier fly as an alternative protein source in broiler chicken diet for mitigating feed cost

Md Sazedul Karim Sarker\*<sup>1,2</sup>, US Ety<sup>1,2</sup>, MT Hossain<sup>1,2</sup>, NN Lisa<sup>1,2</sup>, MA Rashid<sup>1,2</sup>, A Islam<sup>1,2</sup>, MF Sharmin<sup>3</sup>, SS Zihan<sup>2</sup>, S Faruque<sup>1</sup>

<sup>1</sup>Poultry Research Center, Bangladesh Livestock Research Institute, Savar, Dhaka, Bangladesh, <sup>2</sup>Strengthening of Poultry Research and Development Project, BLRI, Savar, Dhaka, Bangladesh, <sup>3</sup>Bangladesh Jute Research Institute, Manik Mia Avenue, Dhaka, Bangladesh

### **7:15 AM T178**

Evaluation of fenugreek seed extract fed to 0 to 21 d old broiler chickens on performance and oocyst shedding

Samantha Huffer\*<sup>1</sup>, Alyssa M. Lyons<sup>2</sup>, Nathan Sudom<sup>3</sup>, Mike E. Persia<sup>1</sup>

<sup>1</sup>School of Animal Sciences, Virginia Tech, Christiansburg, Virginia, United States, <sup>2</sup>School of Animal Sciences, Virginia Tech, Blacksburg, Virginia, United States, <sup>3</sup>Emerald Seed Products, Avonlea, Saskatchewan, Canada

### **7:30 AM T179**

Effects of supplementing broiler diets with mango peel and seed kernel extracts on growth performance, carcass characteristics, and gut health

Zafar Hayat\*<sup>2,1</sup>, Tuba Riaz<sup>1</sup>, Sana Ullah<sup>1</sup>

<sup>1</sup>IDRC Project Lab., University of Veterinary and Animal Sciences, Lahore, Pakistan, <sup>2</sup>Department of Animal Science, College of Agriculture, University of Sargodha, Sargodha, Pakistan

### **7:45 AM T180**

Yolk coloring efficacy of natural xanthophyll based products in relation to commercial standard C30-ester product

Yauheni Shastak<sup>1</sup>, Wolf Pelletier<sup>1</sup>, Alvaro Gordillo<sup>2</sup>, Kevin Matter\*<sup>3</sup>, Christian Scharch<sup>4</sup>

<sup>1</sup>BASF SE, Ludwigshafen am Rhein, Germany, <sup>2</sup>BASF Espanola S.L., Barcelona, Spain, <sup>3</sup>BASF Corp., Florham Park, New Jersey, United States, <sup>4</sup>Feedtest, Wettin-Löbejün, Germany

### **8:00 AM T181**

Dietary chlorella vulgaris and cinnamon oil enhance growth performance and intestinal health in broiler chickens

Ahmed Kewan\*<sup>1,2</sup>, AbdElrazeq M. Shehata<sup>1</sup>, Mahmoud Madkour<sup>3</sup>, Abdelkawy A. El-Ghoul<sup>1</sup>, R. A. Abo-Salem<sup>1</sup>, Waleed Abdelmoez<sup>1</sup>, Ahmed Ramzy<sup>1</sup>

<sup>1</sup>Department of Animal Production, Faculty of Agriculture, Al-Azhar University, Nasr City, Cairo, Egypt, <sup>2</sup>Department of Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>3</sup>Animal Production Department, National Research Center, Dokki, Giza, Egypt

### **8:15 AM T182**

Production performance of laying hens supplemented with essential oils of cinnamon, clove and oregano

Midian Nascimento dos Santos\*, Stephanie Torrey

Trouw Nutrition, Puslinch, Ontario, Canada

### **8:30 AM T183**

Evaluating the effect of dietary supplementation of NeutraPath® and tribasic copper chloride on the growth performance of Ross 308 broilers exposed to a necrotic enteritis challenge

Anthony D. Quant\*<sup>1</sup>, Corey A. Johnson<sup>1</sup>, Logan Erb<sup>1</sup>, Elizabeth J. Miller<sup>1</sup>, Jay Hughes<sup>2</sup>, Aldo Rossi<sup>2</sup>

<sup>1</sup>Kalmbach Nutritional Services, Upper Sandusky, Ohio, United States, <sup>2</sup>Amlan Internaional, LLC, Chicago, Illinois, United States

**8:45 AM T184**

A microencapsulated blend of botanicals can enhance growth performance and support gut health of broilers in commercial conditions under a conventional anticoccidial program

Benedetta Tugnoli\*<sup>1</sup>, Antonino Messina<sup>1</sup>, Giulia Giovagnoni<sup>1</sup>, Andrea Piva<sup>1</sup>, Ester Grilli<sup>2,3</sup>

<sup>1</sup>Vetagro, Reggio Emilia, Italy, <sup>2</sup>University of Bologna, Bologna, Italy, <sup>3</sup>Vetagro Inc, Chicago, Illinois, United States

**9:00 AM T185**

Gut-released bioactive compounds to improve animal performance

Caio Tellini\*, Mariana Ornaghi, Ricardo Castilho, Rafaela Berto, Cátia Miquilino

Research and Development, Safeeds, Cascavel, Paraná, Brazil

**9:15 AM T186**

A blend of *Castanea sativa* polyphenols and coated short-chain fatty acids improves the performance and gut health of broilers

David Harrington\*<sup>1</sup>, Yann Lever<sup>2</sup>, Jean Francois Le Roux<sup>2</sup>, Nemanja Todorovic<sup>1</sup>

<sup>1</sup>nuance Biotechnology, Lausanne, Switzerland, <sup>2</sup>Global Nutrition International, Fougères, Veuilleux, France

**9:30 AM T187**

Quantifying the effect of an encapsulated blend of essential oils and organic acid on performance, environmental impacts and feeding costs of broilers: a meta-analytical approach

William Lambert, Clément Guele, Romain Moreau, Clarisse Techer\*

miXscience, Bruz, France

**9:45 AM T188**

A synergistic blend of organic acids administered in water improves the productive traits of broilers

Lane Pineda<sup>2</sup>, Giseli Heim\*<sup>1</sup>

<sup>1</sup>Selko, Amersfoort, Netherlands, <sup>2</sup>R&D, Trouw Nutrition, Amersfoort, Netherlands

**10:00 AM T189**

The power of data in DFM assessment - waterline application

Sasha van der Klein\*, Niels Christensen, Kirsty Gibbs

Danisco Animal Nutrition & Health, Oegstgeest, Netherlands

**10:15 AM T190**

Effect of dietary inclusion of *Saccharomyces cerevisiae* fermentation product (Original XPC™) and stocking density on production performance and egg quality in brown egg strain laying hens

Kelly E. Brannan\*<sup>1</sup>, Becca Wysocky<sup>2</sup>, Kenneth Anderson<sup>2</sup>

<sup>1</sup>NCDACS PRS, Midrand, South Africa, <sup>2</sup>North Carolina State University, Raleigh, North Carolina, United States

**10:30 AM T191**

Yeast Fermentate Supplementation May Enhance Early Cecal Microbiota Maturation in Chicks

Elena G. Olson\*<sup>1</sup>, Ashley A. Tarcin<sup>2</sup>, Lindsey A. Wythe<sup>4</sup>, Abe Scheaffer<sup>3</sup>, Steve Ricke<sup>1</sup>

<sup>1</sup>University of Wisconsin-Madison, Madison, Wisconsin, United States, <sup>2</sup>Animal and Dairy Sciences, University of Wisconsin-Madison, Madison, Wisconsin, United States, <sup>3</sup>Harvest Fuel Inc, Walhalla, North Dakota, United States, <sup>4</sup>Texas A&M University, College Station, Texas, United States

**10:45 AM T192**

Effects of a *Saccharomyces* yeast postbiotic and reduced protein and amino acid diet on broiler performance

Mathew A. Vaughn\*<sup>1</sup>, John Gonzalez<sup>2</sup>, Edgar Miller<sup>1</sup>, James McNaughton<sup>3</sup>

<sup>1</sup>Research and Development, Puretein Bioscience, Maxwell, Iowa, United States, <sup>2</sup>University of Georgia, Athens, Georgia, United States, <sup>3</sup>AHPPharma, Hebron, Maryland, United States

**11:00 AM Milton L. Dendy Keynote Lecture**

Moderator: Silvia Carnaccini, Iowa State University

Room Number: B405

The History of Our Scientific Societies and the US Broiler Industry

Joseph Giambrone\*

*Poultry Science, Auburn University, Auburn, Alabama, United States*

**12:00 PM SCAD Business Meeting**

President: Silvia Carnaccini

Room Number: B405

**12:00 PM SPSS Business Meeting**

President: Roshan Adhikari

Room Number: B407

## **Welfare and Behavior III**

Moderator: T. Bas Rodenburg, Utrecht University

Room Number: B407

Tuesday, January 28, 2025

### **7:00 AM T193**

Current and future tools to monitor laying hen welfare in the transition to cage-free systems

T. Bas Rodenburg\*

*Utrecht University, Utrecht, Netherlands*

### **7:15 AM T194**

Golda: a genetic model to eliminate male chick culling in the egg industry  
Enbal Ben-Tal Cohen<sup>\*1</sup>, Olga Genin<sup>2</sup>, Michael Pfann<sup>1,3</sup>, Michal Maimon<sup>1</sup>, Izel Cohen<sup>1,3</sup>, Tatyana Kushnir<sup>1</sup>, Amit Haron<sup>1</sup>, Shanthi Dharanivasan<sup>1</sup>, Eva Lamed<sup>2</sup>, Dmitry Dima Shinder<sup>2</sup>, Shelly Druyan<sup>1</sup>, Yuval Cinnamon<sup>1,2</sup>

<sup>1</sup>*Department of Poultry and Aquaculture, Institute of Animal Sciences, Agricultural Research Organization - The Volcani Institute, Rishon LeTsiyon, Israel*, <sup>2</sup>*NextHen, Bnei Brak, Israel*, <sup>3</sup>*The Hebrew University of Jerusalem, Rehovot, Israel*

### **7:30 AM T195**

Effect of humidity during the hatching phase of incubation on broiler chick quality, tibia bone morphology, and behavior

Chantel Pennicott<sup>\*1</sup>, Angela Perretti<sup>2</sup>, Victor Oyeniran<sup>1</sup>, Sara Orlowski<sup>1</sup>, Rosemary Whittle<sup>1</sup>, Jaelen Cherry<sup>1</sup>, Shawna Weimer<sup>1</sup>

<sup>1</sup>*Poultry Science, University of Arkansas, Farmington, Arkansas, United States*, <sup>2</sup>*Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States*

### **7:45 AM T196**

Evaluation of mechanical cervical dislocation methods for euthanasia in chicks

Aaliyah Gore<sup>\*1</sup>, Laya Silva<sup>1</sup>, Nathan Nelson<sup>1</sup>, Sara Reichelt<sup>4</sup>, Monique Pairis-Garcia<sup>1</sup>, Rocio Crespo<sup>2</sup>, Allison N. Pullin<sup>3</sup>

<sup>1</sup>*Population Health and Pathobiology, North Carolina State University, Raleigh, North Carolina, United States*, <sup>2</sup>*Population Health and Pathobiology, North Carolina State University, Raleigh, North Carolina, United States*, <sup>3</sup>*Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States*, <sup>4</sup>*Aviagen, Huntsville, Alabama, United States*

### **8:00 AM T197**

A Semi-Supervised Auto-Labeling Approach to Enhance Artificial Intelligence in Poultry Farming

Ramesh B. Bist<sup>\*1</sup>, Hannah Atungulu<sup>2</sup>, Lilong Chai<sup>3</sup>, Shawna Weimer<sup>4</sup>, Chantel Pennicott<sup>5</sup>, Xiao Yang<sup>6</sup>, Sachin Subedi<sup>3</sup>, Yang Tian<sup>1</sup>, Dongyi Wang<sup>1,7</sup>

<sup>1</sup>*Biological and Agricultural Engineering, University of Arkansas, Fayetteville, Arkansas, United States*, <sup>2</sup>*Haas Hall Academy, Springdale, Arkansas, United States*, <sup>3</sup>*Department of Poultry Science, University of Georgia, Athens, Georgia, United States*, <sup>4</sup>*Department of Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States*, <sup>5</sup>*Poultry Science, University of Arkansas, Farmington, Arkansas, United States*, <sup>6</sup>*University of Georgia, Athens, Georgia, United States*, <sup>7</sup>*Department of Food Science, University of Arkansas, Fayetteville, Arkansas, United States*

## **Metabolism and Nutrition XI: General Nutrition**

Moderator: Diego A. Martinez, University of Arkansas

Room Number: B407

Tuesday, January 28, 2025

### **8:15 AM T198**

Impact of Dried Blood - Rumen Content Mixture as a Replacement for Sesame Seed Cake on Broiler Chick Performance

Michaele Y. Berhe\*

*Animal Science, Aksum University, Shire, Tigray, Ethiopia*

### **8:30 AM T199**

Bootstrapping Analysis to Uncover Treatment Mechanisms in Performance Trials: Effects of Heat Stress and Functional Oils on Feed Efficiency and Growth

Joan Torrent\*<sup>1</sup>, Leandro Kuritza<sup>2</sup>

<sup>1</sup>*Innovad USA, Durham, North Carolina, United States*, <sup>2</sup>*Solene, Cascavel, Paraná, Brazil*

### **8:45 AM T200**

Development and validation of a transcriptomics-based index to assess the intestinal functions of chickens

Luis F. Romero\*, Laura M. Payling, Krutik Patel, Maria C. Walsh

*BIOFRACTAL, Loule, Portugal*

### **9:00 AM T201**

New approach on mycotoxin risk management in poultry

Ricardo H. Rauber\*<sup>1</sup>, Alexandro Marchioro<sup>2</sup>, Arthur d. Massei<sup>2</sup>

<sup>1</sup>*Vetinova - Strategic Animal Health, Curitiba, PR, Brazil*, <sup>2</sup>*Agromed Patent Co Brazil, Londrina, PR, Brazil*

### **9:15 AM T202**

Comparison of Protein Turnover and Lipid Turnover Effects on Body Composition and Broiler Breeder Performance When Dietary Energy is Altered

Cole Umberson\*<sup>1</sup>, Diego A. Martinez<sup>2</sup>, Joshua Wilkes<sup>1</sup>, Craig Coon<sup>1</sup>

<sup>1</sup>*University of Arkansas, Fayetteville, Arkansas, United States*, <sup>2</sup>*University of Arkansas, Fayetteville, Arkansas, United States*

### **9:30 AM T203**

Performance, Processing Yield, and Economics of Broilers Fed Diets Formulated with Productive Energy

Diego A. Martinez\*, Cole Umberson, Ehsan Sheikhsamani, Sarah Johnson, Craig Coon

*University of Arkansas, Fayetteville, Arkansas, United States*

## **Metabolism and Nutrition XII: Feed Additives**

Moderator: Diego A. Martinez, University of Arkansas

Room Number: B407

Tuesday, January 28, 2025

### **9:45 AM T204**

Saponin-rich plants mixture (Norponin® XO2) supports coccidiosis vaccination program in slow-growing broiler chickens

Hoa BUI<sup>1</sup>, Weishan Wang<sup>2</sup>, Mohammed el Amine BENARBIA\*<sup>1</sup>

<sup>1</sup>R&D, Nor-Feed, Angers, France, <sup>2</sup>Nor-Feed, Beaucauzé, France

### **10:00 AM T205**

Effects of multistrain *Bacillus* based probiotics on growth performance of broilers during a Coccidiosis challenge and the ability to minimize pathogens in-vitro

John Schleifer\*<sup>1</sup>, Shameer Rasheed<sup>1</sup>, Charles Hofacre<sup>2</sup>, Jennie Baxter<sup>2</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, Fairmont, Minnesota, United States, <sup>2</sup>Southern Poultry Research Group, Inc., Watkinsville, Georgia, United States

### **10:15 AM T206**

Effect of dietary probiotic superdose during starter phase on growth performance, fiber digestibility, and bone mineralization in broiler chickens  
Keonjah P. Martin\*

*Agricultural Science- Animal Science, Florida A&M University, Tallahassee, Florida, United States*

**10:30 AM T207** The effect of protease and non-starch polysaccharide (NSP) degrading enzyme supplementation on growth performance, nutrient utilization, and gut morphology of broiler chickens fed corn-soybean meal-based diets

Waqas Ahmed\*<sup>1</sup>, Sara Mubeen<sup>1</sup>, Akhtar Nawaz<sup>1</sup>, Uzair Hassan<sup>1</sup>, Zubair Ali<sup>2</sup>, Mehran Asjad<sup>2</sup>

<sup>1</sup>Institute of Animal and Dairy Sciences, University of Agriculture Faisalabad Punjab Pakistan, Rawalpindi, Pakistan, <sup>2</sup>University of Agriculture Faisalabad, Sub-Campus Toba Tek Singh Punjab Pakistan, Toba Tek Singh, Pakistan

### **10:45 AM T208**

Broiler chickens' response when fed diets formulated with low soybean meal or crystalline amino acids without or with supplementation with multi-component protease

Veronica Cheng\*<sup>1</sup>, Felix Muchiri<sup>1</sup>, Anhao Wang<sup>2</sup>, Rob Patterson<sup>2</sup>, Elijah Kiarie<sup>1</sup>

<sup>1</sup>Animal Biosciences, University of Guelph, Guelph, Ontario, Canada, <sup>2</sup>CBS Bio Platforms Inc., Alberta, Ontario, Canada

### **11:00 AM Milton L. Dendy Keynote Lecture**

Moderator: Silvia Carnaccini, Iowa State University

Room Number: B405

The History of Our Scientific Societies and the US Broiler Industry

Joseph Giambrore\*

*Poultry Science, Auburn University, Auburn, Alabama, United States*

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

President: Silvia Carnaccini

Room Number: B405

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

President: Roshan Adhikari

Room Number: B407



## **Environment and Management II**

Moderator: Jessica Drewry, Mississippi State University

Room Number: B408

Tuesday, January 28, 2025

### **7:00 AM T209**

The Effect of a two-way grading on some KPI, physical characteristics, and sertolli cell counts on broiler breeder males.

Jose J. Bruzual\*

*Aviagen, Dacula, Georgia, United States*

### **7:15 AM T210**

Bed bugs – Re-emerging threat to chickens and workers in the poultry industry

Rocio Crespo\*<sup>1</sup>, Jenny A. Nicholds<sup>2</sup>, Wes Watson<sup>3</sup>, Ronald Baynes<sup>1</sup>, Olivia Petritz<sup>4</sup>, Coby Schal<sup>3</sup>

<sup>1</sup>*Population Health and Pathobiology, North Carolina State University, Raleigh, North Carolina, United States*, <sup>2</sup>*PDRC, University of Georgia, Athens, Georgia, United States*, <sup>3</sup>*Entomology and Plant Pathology, North Carolina State University, Raleigh, North Carolina, United States*, <sup>4</sup>*Clinical Sciences, North Carolina State University, Raleigh, North Carolina, United States*

### **7:30 AM T211**

Effect of cooling system on broiler housing spatial uniformity

Jessica Drewry\*<sup>2</sup>, Jonathan Moon<sup>3</sup>, Matthew Rowland<sup>1</sup>, Joseph Purswell<sup>1</sup>, Beau Ivy<sup>2</sup>

<sup>1</sup>*Agricultural Research Service, United States Department of Agriculture, Mississippi State, Mississippi, United States*, <sup>2</sup>*Agricultural and Biological Engineering, Mississippi State University, Mississippi State, Mississippi, United States*, <sup>3</sup>*Poultry Science, Mississippi State University, Mississippi State, Mississippi, United States*

### **7:45 AM T212**

Consumer Egg Survey for Carotenoid Accumulation and Yolk Fan Score by Production Scheme and Label Claims

Kaeden Smith<sup>2</sup>, Sara Cloft\*<sup>1</sup>, Tyler Lawson<sup>2,3</sup>, Torbert Rocheford<sup>2,3</sup>, Darrin Karcher<sup>1</sup>, Evan Rocheford<sup>3</sup>

<sup>1</sup>*Department of Animal Sciences, Purdue University, West Lafayette, Indiana, United States*, <sup>2</sup>*Department of Agronomy, Purdue University, West Lafayette, Indiana, United States*, <sup>3</sup>*Nutramaize, West Lafayette, Indiana, United States*

### **8:00 AM T213**

Quantification of *S. Enteritidis* and *S. Typhimurium* in broiler chickens inoculated with a cocktail of *Salmonella* serovars using novel duplex qPCR assays

Xiang Li\*<sup>1,2</sup>, Adelumola Oladeinde<sup>1,2</sup>, Michael Rothrock<sup>1,2</sup>, Sohyun Cho<sup>1,2</sup>, Samuel Aggrey<sup>3</sup>, Jodie Lawrence<sup>1,2</sup>

<sup>1</sup>*USDA-ARS, Athens, Georgia, United States*, <sup>2</sup>*EPSPRU, USNPRC, Athens, Georgia, United States*, <sup>3</sup>*Poultry Science, University of Georgia, Athens, Georgia, United States*

### **8:15 AM T214**

Investigating the spatiotemporal distribution of *Escherichia coli* and aerobic bacteria in commercial hatching eggs

Maryam Mohammadi-Aragh\*<sup>1</sup>, Jessica Drewry<sup>1</sup>, Katie E. Elliott<sup>2</sup>

<sup>1</sup>*Mississippi State University, Mississippi State, Mississippi, United States*, <sup>2</sup>*United States Department of Agriculture, Mississippi State, Mississippi, United States*

## Food Safety II

Moderator: Jinquan Wang, Auburn University

Room Number: B408

Tuesday, January 28, 2025

### 8:30 AM T215

Antimicrobial Resistance profiling of *Salmonella* recovered from environments of No-Antibiotics-Ever (NAE) and Conventional broiler complexes

Yagya Adhikari\*<sup>1</sup>, Dianna Bourassa<sup>1</sup>, Sabin Poudel<sup>1</sup>, Matthew Bailey<sup>1</sup>, Richard Buhr<sup>3</sup>, Kenneth Macklin<sup>2</sup>

<sup>1</sup>Department of Poultry Science, Auburn University, Auburn, Alabama, United States, <sup>2</sup>Department of Poultry Science, Mississippi State University, Starkville, Mississippi, United States, <sup>3</sup>USDA ARS Poultry Microbiological Safety and Processing Research Unit, Athens, Georgia, United States

### 8:45 AM T216

Effect of a monoglyceride-based feed ingredient (Biolution™) on *Salmonella* vaccinated broiler chickens

Kevin Watkins<sup>1</sup>, Rigo Fernando Soler<sup>2</sup>, Stacie Appleton\*<sup>3</sup>, Eric Heskett<sup>4</sup>, Ramesh Selvaraj<sup>5</sup>, Marcos Sanchez-Plata<sup>2</sup>

<sup>1</sup>FoodFirst LLC, Indianapolis, Indiana, United States, <sup>2</sup>International Center for Food Industry Excellence, Texas Tech University, Lubbock, Texas, United States, <sup>3</sup>Alura USA, Durham, North Carolina, United States, <sup>4</sup>Case Farms, Troutman, North Carolina, United States, <sup>5</sup>University of Georgia, Athens, Georgia, United States

### 9:00 AM T217

Impact of Organic acid supplementation on Cecal Microbiome of Broiler Chicks inoculated with *Salmonella*

Sabin Poudel\*<sup>1</sup>, Fanny Abigail Contreras Zelaya<sup>1</sup>, Eva G. Guzman<sup>1</sup>, Wilmer J. Pacheco<sup>1</sup>, Ruediger Hauck<sup>1</sup>, Dianna Bourassa<sup>1</sup>, Kenneth Macklin<sup>2</sup>

<sup>1</sup>Department of Poultry Science, Auburn University, Auburn, Alabama, United States, <sup>2</sup>Department of Poultry Science, Mississippi State University, Starkville, Mississippi, United States

### 9:15 AM T218

Vaccination with the USDA BBS 866 *Salmonella* DIVA vaccine reduces intestinal colonization and systemic dissemination of DSC *Salmonella enterica* serovar Enteritidis in chickens

Shawn Bearson\*<sup>1</sup>, Bradley Bearson<sup>2</sup>, Samuel Whelan<sup>1</sup>, Maya Encinosa<sup>1</sup>, Durga Neupane<sup>1,2</sup>

<sup>1</sup>USDA-ARS-NADC-Food Safety & Enteric Pathogens Research Unit, Ames, Iowa, United States, <sup>2</sup>USDA-ARS-National Laboratory for Agriculture and the Environment, Ames, Iowa, United States

### 9:30 AM T219

Mitigation of necrotic enteritis in broiler chickens through the actions of black cumin seeds and bacteriophage

Vishal Manjunatha\*<sup>2</sup>, Justice-Alucho C.H.<sup>3</sup>, Brett Lumpkins<sup>1,4</sup>, Yang Gang<sup>5</sup>, Annel K. Greene<sup>1</sup>, Jingxue Wang<sup>5</sup>, Xiuping Jiang<sup>2</sup>

<sup>1</sup>Department of Animal and Veterinary Sciences, Clemson University, Clemson, South Carolina, United States, <sup>2</sup>Department of Food, Nutrition and Packaging Sciences, Clemson University, Central, South Carolina, United States, <sup>3</sup>Department of Biological Sciences, Clemson University, Clemson, South Carolina, United States, <sup>4</sup>Southern Poultry Feed & Research, Inc, Athens, Georgia, United States, <sup>5</sup>Department of Food Science and Engineering, Ocean University of China, Qingdao, China

### 9:45 AM T220

Molecular characteristics of *Salmonella* spp. from retail broiler meat

Karla V. Casco\*<sup>1</sup>, Maria V. Baca<sup>1</sup>, Sabin Poudel<sup>2</sup>, Richard Buhr<sup>3</sup>, Dianna Bourassa<sup>1</sup>

<sup>1</sup>Auburn University, Auburn, Alabama, United States, <sup>2</sup>Department of Poultry Science, Auburn University, Auburn, Alabama, United States, <sup>3</sup>US National Poultry Research Center, USDA-ARS, Athens, Georgia, United States

**10:00 AM T221**

A systematic review and meta-analysis on the efficacy of organic acids to reduce *Salmonella* colonization in crop and ceca of broilers

Jinquan Wang\*<sup>2</sup>, Bharath Mallavarapu<sup>1</sup>, Pranita Patil<sup>1</sup>, Deepak Subedi<sup>1</sup>, Harshavardhan Thippareddi<sup>1</sup>, Amit K. Singh<sup>3</sup>, Dianna Bourassa<sup>4,2</sup>, Sabin Poudel<sup>5</sup>

<sup>1</sup>*Poultry Science Department, University of Georgia, Athens, Georgia, United States*, <sup>2</sup>*Department of Poultry Science, Auburn University, Auburn, Alabama, United States*, <sup>3</sup>*Department of Agriculture and Natural Resources, Delaware State University, Dover, Delaware, United States*, <sup>4</sup>*Auburn University, Auburn, Alabama, United States*, <sup>5</sup>*Department of Poultry Science, Auburn University, Auburn, Alabama, United States*

**10:15 AM T222**

Effect of dietary fat sources on colonization and dissemination of *Salmonella* in broiler chickens

Shijina Manjankattil\*<sup>2</sup>, Jinquan Wang<sup>1</sup>, Sabin Poudel<sup>2</sup>, Matthew Bailey<sup>2</sup>, Yagya Adhikari<sup>3</sup>, Karla V. Casco<sup>2</sup>, Samuel J. Rochell<sup>2</sup>, Dianna Bourassa<sup>2</sup>

<sup>1</sup>*Department of Poultry Science, Auburn University, Auburn, Alabama, United States*, <sup>2</sup>*Department of Poultry Science, Auburn University, Auburn, Alabama, United States*, <sup>3</sup>*Department of Poultry Science, Auburn University, Auburn, Alabama, United States*

**10:30 AM T223**

Comparison of egg quality characteristics of different poultry species of Bangladesh

Nushrat N. Lisa\*<sup>1</sup>, Md Sazedul Karim Sarker<sup>1</sup>, Shakila Faruque<sup>2</sup>, Muhammad A. Rashid<sup>1</sup>, Umme S. Ety<sup>1</sup>, Aminul Islam<sup>1</sup>, Sadman S. Zihan<sup>3</sup>, Farhana Sharmin<sup>4</sup>

<sup>1</sup>*Poultry Research Center, Bangladesh Livestock Research Institute, Savar, Dhaka, Bangladesh*, <sup>2</sup>*Bangladesh Livestock Research Institute, Dhaka, Savar, Bangladesh*, <sup>3</sup>*Strengthening of Poultry Research and Development Project, Bangladesh Livestock Research Institute, Dhaka, Savar, Bangladesh*, <sup>4</sup>*Bangladesh Jute Research Institute, Dhaka, Bangladesh*

**10:45 AM T224**

Effect of *Corchorus capsularis* as Functional Feed Additives on

Performance, Meat Composition and Oxidative Stability in Turkey Meat

F Sharmin\*<sup>2</sup>, Md Sazedul Karim Sarker<sup>1</sup>, NN Lisa<sup>1</sup>, SS Zihan<sup>1</sup>, AM Shohail<sup>3</sup>, US Ety<sup>1</sup>, MS Rahman<sup>2</sup>

<sup>1</sup>*Poultry Research Center, Bangladesh Livestock Research Institute, Savar, Dhaka, Bangladesh*, <sup>2</sup>*Bangladesh Jute Research Institute (BLRI), Dhaka, Bangladesh*, <sup>3</sup>*Jahangirnagar University, Dhaka, Bangladesh*

**11:00 AM Milton L. Dendy Keynote Lecture**

Moderator: Silvia Carnaccini, Iowa State University

Room Number: B405

The History of Our Scientific Societies and the US Broiler Industry

Joseph Giambrone\*

*Poultry Science, Auburn University, Auburn, Alabama, United States*

**12:00 PM SCAD Business Meeting**

President: Silvia Carnaccini

Room Number: B405

**12:00 PM SPSS Business Meeting**

President: Roshan Adhikari

Room Number: B407

## Poster Sessions – Student Competition

Moderators: Chrysta Beck, University of Arkansas; Chongxiao Chen, University of Georgia  
Monday, January 27, 2025  
Time: 4:00-6:00 PM  
Room Number: B402

### Environment and Management

#### P225

Evaluating the effects of ventilation shutdown plus heat (VSDH), carbon dioxide (VSDCO<sub>2</sub>), and nitrogen gas (VSDN<sub>2</sub>) on laying hen electroencephalograms (EEGs)

Kari Harding<sup>\*1GS</sup>, Emmillie Boot<sup>1</sup>, Jackson Evans<sup>2</sup>, Sanjay Shah<sup>2</sup>, Ramon Malheiros<sup>1</sup>, Kenneth Anderson<sup>1</sup>

<sup>1</sup>*Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States*, <sup>2</sup>*Biological and Agricultural Engineering, North Carolina State University, Raleigh, North Carolina, United States*

#### P226

Impact of environmental enrichments on litter moisture

Chelsea S. Castillo Najera<sup>\*UG</sup>, Katy J. Tarrant

*Animal Sciences and Agricultural Education, California State University, Fresno, Fresno, California, United States*

#### P227

Effect of different levels of phenolic essential oils on broiler water intake and growth performance

Reagan Barnett<sup>\*1,2UG</sup>, Carson Scharlau<sup>2</sup>, Timothy Broderick<sup>2</sup>, Audrey McElroy<sup>1</sup>

<sup>1</sup>*Poultry Science, Texas A&M University, College Station, Texas, United States*, <sup>2</sup>*Ralco Nutrition Inc., Marshall, Minnesota, United States*

#### P228

Spatial Analysis of Microbial Contamination Sources in Poultry Litter: Influence of Feed, Water, and Environmental Factors on Bacterial Counts  
Maxim A. Peckenschneider<sup>\*1GS</sup>, Elena G. Olson<sup>1</sup>, Steve Ricke<sup>1</sup>, Megan McCutchen<sup>1</sup>, Jake Byrnes<sup>2</sup>, Casey McGinley<sup>2</sup>

<sup>1</sup>*Animal Science, University of Wisconsin-Madison, Madison, Wisconsin, United States*, <sup>2</sup>*BarnwellBio, San Diego, California, United States*

#### P229

Predictive performance of light modeling software in commercial broiler environments

Joshua A. Etherton<sup>\*1GS</sup>, John Linhoss<sup>1</sup>, Jeremiah D. Davis<sup>2</sup>, Joseph Purswell<sup>3</sup>, Anna Linhoss<sup>1</sup>, Jessica D. Starkey<sup>4</sup>

<sup>1</sup>*Biosystems Engineering, Auburn University, Auburn, Alabama, United States*, <sup>2</sup>*National Poultry Technology Center, Auburn University, Auburn, Alabama, United States*, <sup>3</sup>*Poultry Research Unit, USDA-ARS, Starkville, Alabama, United States*, <sup>4</sup>*Poultry Science, Auburn University, Auburn, Alabama, United States*

#### P230

Feed raking behavior may not relate to excessive feed wastage of week old broiler chicks in commercial barns

Taylor Waugerman<sup>\*GS</sup>, McKenzie Setler, Joseph S. Moritz

*School of Agriculture and Food Systems, West Virginia University, Harpers Ferry, West Virginia, United States*

#### P231

Computational fluid dynamics model of a poultry incubator and its environmental spatiotemporal behaviors

Melvy Fernandes<sup>\*1GS</sup>, Shanti Bhushan<sup>1</sup>, Greg W. Burgreen<sup>1</sup>, Jessica Drewry<sup>1</sup>, Joseph Purswell<sup>2</sup>

<sup>1</sup>*Mississippi State University, Mississippi State, Mississippi, United States*, <sup>2</sup>*USDA, Starkville, Mississippi, United States*

## Food Safety

### P232

Survival and translocation dynamics of *Salmonella* Typhimurium on eggshells and internal egg components incubated under hatching environmental conditions

Colin P. Wallrich\*<sup>1UG</sup>, Elena Olson<sup>1</sup>, Emily Matiak<sup>1</sup>, James Corban<sup>2</sup>, Srivatsan Raman<sup>2,3</sup>, Steve Ricke<sup>1</sup>

<sup>1</sup>*Animal and Dairy Science, University of Wisconsin- Madison, Madison, Wisconsin, United States*, <sup>2</sup>*Biochemistry, University of Wisconsin-Madison, Madison, Wisconsin, United States*, <sup>3</sup>*Bacteriology, University of Wisconsin-Madison, Madison, Wisconsin, United States*

### P233

Impact of Iron Availability on the Growth Kinetics of *Campylobacter jejuni*  
Emily Matiak\*<sup>1GS</sup>, Elena G. Olson<sup>1</sup>, Joshua Jendza<sup>2</sup>, Eric Neeno-Eckwall<sup>3</sup>, Jessica Hite<sup>3</sup>, Steve Ricke<sup>1</sup>

<sup>1</sup>*Animal and Dairy Science, University of Wisconsin-Madison, Madison, Wisconsin, United States*, <sup>2</sup>*Qualitech Incorporated, Chaska, Minnesota, United States*, <sup>3</sup>*Department of Pathobiological Sciences, School of Veterinary Medicine, Madison, Wisconsin, United States*

### P234

Reduction of microbial spoilage on chicken breast fillets using air plasma-generating device

Katherine Sierra\*<sup>GS</sup>, Micah T. Black, Amit Morey

*Poultry Science, Auburn University, Auburn, Alabama, United States*

### P235

*Salmonella* load and shedding in broiler live production varies temporally

Emily E. Cason\*<sup>GS</sup>, Nikki Shariat

*Population Health, University of Georgia, Athens, Georgia, United States*

### P236

A multi-antigen subunit vaccine enhances maternal and offspring immunity against *Campylobacter jejuni* in chickens

Mostafa Ahmed\*<sup>1GS</sup>, Shreeya Sharma<sup>2</sup>, Abigail Schneider<sup>1</sup>, Ari Bragg<sup>1</sup>, Khaled Abdelaziz<sup>1</sup>

<sup>1</sup>*Animal and Veterinary Science, Clemson University, Clemson, South Carolina, United States*, <sup>2</sup>*Animal and Veterinary Sciences, Clemson University, Central, South Carolina, United States*

### P237

Use of an all-natural, organic certified, yeast blend product to mitigate *Salmonella* Enteritidis in laying hens

Carlos A. Guardado\*<sup>1GS</sup>, Pratima Adhikari<sup>1</sup>, Fozol Ovi<sup>3</sup>, Theresia Lavergne<sup>2</sup>, Charlie Elrod<sup>2</sup>

<sup>1</sup>*Poultry Science, Mississippi State, Starkville, Mississippi, United States*, <sup>2</sup>*Natural Biologics, Inc., Stephenville, Texas, United States*, <sup>3</sup>*Panthera Vax, Ames, Iowa, United States*

### P238

Evaluating the presence of humoral immune response to *Campylobacter* colonization in broiler chickens

Tanmaie Kalapala\*<sup>1GS</sup>, Anna L. F. V. Assumpcao<sup>1</sup>, Geetha Philips<sup>1</sup>, Tomi Obe<sup>1</sup>, Palmy Jesudhasan<sup>2</sup>, Annie Donoghue<sup>2</sup>, Komala Arsi<sup>2</sup>

<sup>1</sup>*Department of Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States*, <sup>2</sup>*USDA-ARS, Poultry Production and Product Safety Research, Fayetteville, Arkansas, United States*

### P239

Changes in the microbiota of treated and untreated litter of broilers given organic acids in the drinking water

Jolie A. Stumpff\*<sup>1UG</sup>, Eva G. Guzman<sup>2</sup>, Andrea Pietruska<sup>3</sup>, Rana Waqar Tabish<sup>2</sup>, Wilmer J. Pacheco<sup>2</sup>, Dianna Bourassa<sup>2</sup>, Kenneth Macklin<sup>4</sup>, Ruediger Hauck<sup>2,3</sup>

<sup>1</sup>*Department of Animal Science, Auburn University, Auburn, Alabama, United States*, <sup>2</sup>*Department of Poultry Science, Auburn University, Auburn, Alabama, United States*, <sup>3</sup>*Department of Pathobiology, Auburn University, Auburn, Alabama, United States*, <sup>4</sup>*Department of Poultry Science, Mississippi State University, Starkville, Mississippi, United States*

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Evaluating *Salmonella* sampling methods through broiler processing  
 Amber Richards\*<sup>1GS</sup>, Caitlin Harris<sup>2</sup>, Elizabeth McMillan<sup>2</sup>, Richard Buhr<sup>2</sup>,  
 Nikki Shariat<sup>1</sup>

<sup>1</sup>Population Health, University of Georgia, Athens, Georgia, United States,  
<sup>2</sup>Poultry Microbiological Safety and Processing Research Unit, USDA-ARS, Athens, Georgia, United States

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Effect of novel *Salmonella* bacterin vaccines on immune response to a heterologous challenge in layers

Mohan Naidu Korada\*<sup>1</sup>, Ramesh Selvaraj<sup>1</sup>, Parimal Sheth<sup>3</sup>, Praveen Reddy Kasu<sup>1</sup>, Waqas Ishaq<sup>1</sup>, Divyashree Ramalingam<sup>2</sup>

<sup>1</sup>Poultry Science, University of Georgia, Athens, Georgia, United States,  
<sup>2</sup>Animal Science, University of Georgia, Athens, Georgia, United States,  
<sup>3</sup>Endovac Animal Health Inc, Columbia, Missouri, United States

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Effects of short-temperature abuse during less-than-truckload (LTL) transportation on spoilage of raw chicken breast during retail

Vianca Tashiguano\*<sup>GS</sup>, Madison Sirmon, Payten Leeds, Jodie Jones, Jakob Doster, Cameron Smith, Laura Garner, Sungeun Cho, Amit Morey  
 Poultry Science, Auburn University, Auburn, Alabama, United States

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Impact of feed withdrawal and bacteriophage SP6 on *Salmonella* Typhimurium reduction and microbial dynamics in a poultry cecal model

Haley Tarcin\*<sup>2UG</sup>, Elena G. Olson<sup>2</sup>, Emily Matiak<sup>2</sup>, Colin P. Wallrich<sup>2</sup>, Megan McCutchen<sup>2</sup>, James Corban<sup>1</sup>, Srivatsan Raman<sup>1</sup>, Steve Ricke<sup>2</sup>

<sup>1</sup>University of Wisconsin-Madison, Madison, Wisconsin, United States,  
<sup>2</sup>Animal and Dairy Science, University of Wisconsin-Madison, Madison, Wisconsin, United States

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Evaluation of environmental stresses contributing to the persistence of *Salmonella* Infantis in processing environments

Prantho Malakar Dipta\*<sup>GS</sup>, Eniola Betiku, Tomi Obe

Department of Poultry Science, University of Arkansas-Fayetteville, Fayetteville, Arkansas, United States

**P245**

Challenges and efficacy of a nanoparticle-based *Salmonella* subunit vaccine in poultry administered through drinking water against *Salmonella* infection

Sara Dolatyabi\*<sup>1GS</sup>, Philip Yeboah<sup>2</sup>, Demilade I. Ibiwoye<sup>2</sup>, Kate McGovern<sup>1</sup>, Jennifer Schrock<sup>1</sup>, Ganesh Yadaigiri<sup>1</sup>, Ekachai Dumkliang<sup>1</sup>, Manisha Mehdi<sup>1</sup>, Thaciane Amaral<sup>2</sup>, Veeru Patil<sup>1</sup>, Dina Bugybayeva<sup>1</sup>, Toni Thea Sullivan<sup>2</sup>, Lisa Bielke<sup>2</sup>, Renukaradhya J. Gourapura<sup>1</sup>

<sup>1</sup>Department of Animal Science, Ohio State University, Wooster, Ohio, United States,  
<sup>2</sup>Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States

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Elucidating the Role of Transcriptional factors in the Multiplication of *Salmonella* Typhimurium in Chicken Egg yolk

Aisha Madi\*<sup>1GS</sup>, Greeshma Bharathan<sup>1</sup>, Hunter Sheffield<sup>1</sup>, Richard Buhr<sup>2</sup>, Shabarinath Srikumar<sup>1</sup>

<sup>1</sup>Poultry Science, Auburn University, Auburn, Alabama, United States,  
<sup>2</sup>USDA-ARS, Athens, Georgia, United States

**Processing and Products****P247**

Effect of strain and welfare enrichment on turkey meat quality

Camila Hammel Sobreira\*<sup>UG</sup>, Christina S. Sigmon, Jesse L. Grimes, Allison N. Pullin, Yan L. Campbell

Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States

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The effect of peanut skin supplemented corn/soy diet on broiler meat quality  
Afsana Rahaman Munmun\*<sup>1,2GS</sup>, Jean C. Caceres<sup>3</sup>, Christina S. Sigmon<sup>2</sup>,  
Yabaiz Tahir<sup>2</sup>, Thien Vu<sup>5</sup>, Ondulla T. Toomer<sup>4</sup>, Lin L. Walker<sup>2</sup>, Yan L.  
Campbell<sup>2</sup>

<sup>1</sup>Food, Bioprocessing & Nutrition Sciences Department, North Carolina State University, Raleigh, North Carolina, United States, <sup>2</sup>Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States, <sup>3</sup>Prestage Poultry Science Department, North Carolina State University, Raleigh, North Carolina, United States, <sup>4</sup>Agricultural Research Service, United States Department of Agriculture, Raleigh, North Carolina, United States, <sup>5</sup>United States Department of Agriculture, Raleigh, North Carolina, United States

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Effects of graded levels of methionine on immune organ characteristics  
Kaitlyn Sommer\*<sup>1GS</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, Illinois, United States, <sup>2</sup>Evonik Industries, Essen, Germany

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Setting the foundation: Preliminary evaluation of digestible lysine requirements in male turkey poults during early development from 0-4 weeks

Darby R. Boontarue\*<sup>GS</sup>, Sophia Bianchi, Luis Giron, John Boney  
*Animal Science, Pennsylvania State University, State College, Pennsylvania, United States*

**P251**

Effect of proline supplementation on gene expression in broiler chickens challenged with *Eimeria* spp.

Tatyany S. Mani\*<sup>1GS</sup>, Lizia C. Carvalho<sup>2</sup>, Ramon D. Malheiros<sup>1</sup>

<sup>1</sup>Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States, <sup>2</sup>Grupo BTZ, Londrina, PR, Brazil

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Investigation of interactions between phytase and anti-nutritional factors in soybean meal

Rebekah L. Drysdale\*<sup>GS</sup>, Benjamin W. Parsons

*Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States*

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Impact of almond hulls and a xylanase-cellulase enzyme on cecal microbiota in Lohmann LSL-Lite pullets and laying hens

Nelly G. Cribillero Chuqui huaccha\*<sup>1GS</sup>, Craig Wyatt<sup>2</sup>, Kelley Wamsley<sup>1</sup>, Timothy Boltz<sup>1</sup>, Li Zhang<sup>1</sup>, Klinton W. McCafferty<sup>3</sup>, Pratima Adhikari<sup>1</sup>

<sup>1</sup>Poultry Science, Mississippi State University, Starkville, Mississippi, United States, <sup>2</sup>Feed Ingredients, AB Vista, Plantation, Florida, United States, <sup>3</sup>USDA-ARS-Poultry Research Unit, Mississippi State, Mississippi, United States

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Dietary supplementation of microalgae and xylanase influences nutrient transporter and tight junction gene expression in broiler chickens

Pravin Mishra\*<sup>GS</sup>, Razib Das, Birendra Mishra, Rajesh Jha

*Department of Human Nutrition, Food and Animal Sciences, College of Tropical Agriculture and Human Resources, University of Hawaii at Manoa, Honolulu, Hawaii, United States*

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A novel precision biotic reduces the negative impact of *Eimeria* challenge on growth performance and amino acid digestibility in broiler chickens fed wheat-based diets

Rama Devi Kolli\*<sup>1GS</sup>, Bhargavi Kasireddy<sup>1</sup>, Cristiano Bortoluzzi<sup>2</sup>, Oluyinka Olukosi<sup>1</sup>

<sup>1</sup>Department of Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>2</sup>dsm-firmenich, Kaiseraugst, Switzerland

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Probiotic lactobacilli modulate the gut microbiome and reduces *Campylobacter* colonization in chickens

Shreya Sharma\*<sup>1GS</sup>, Mostafa Naguib<sup>1</sup>, Anna Seekatz<sup>2</sup>, Hosni Hassan<sup>3</sup>, Khaled Abdelaziz<sup>1</sup>

<sup>1</sup>Animal and Veterinary Sciences, Clemson University, Clemson, South Carolina, United States, <sup>2</sup>Department of Biological Sciences, Clemson University, Clemson, South Carolina, United States, <sup>3</sup>Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States

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Evaluation of precision glycans on growth performance and appetite regulation in broiler chickens

Abiola S. Lawal\*<sup>1GS</sup>, Olayiwola Adeola<sup>1</sup>, Aaron J. Cowieson<sup>2</sup>, Kolapo M. Ajuwon<sup>1</sup>

<sup>1</sup>Animal Sciences, Purdue University, Lafayette, Indiana, United States, <sup>2</sup>dsm-firmenich, Kaiseraugst, Switzerland

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Evaluation of two sources of 25-Hydroxyvitamin D3 on early growth performance and bone characteristics on broilers reared on a wire-flooring induction model from D1-56 of age

Anh Do\*<sup>1, 2GS</sup>, Khawla S. Alharbi<sup>1, 2</sup>, Amanda Anthney<sup>1, 3</sup>, Andi Asnayanti<sup>1, 3</sup>, Muhammad Ali Muhammad<sup>1</sup>, Abdulaziz Alqahtani<sup>1, 3</sup>, Alexa Thomas<sup>1</sup>, Bailey Herberger<sup>1</sup>, Hannah McCarver<sup>1</sup>, Abigail LeComte<sup>1</sup>, Caren Ulcak<sup>1</sup>, Kara Hoover<sup>1</sup>, Kennedy Hicks<sup>1</sup>, Olivia Chapell<sup>1</sup>, Wesley Vaught<sup>1</sup>, Christiane Matias<sup>4</sup>, Carlos Lozano-Poveda<sup>5</sup>, Estefania Perez-Calvo<sup>5</sup>, Stephanie Kulbacki<sup>6</sup>, Prafulla Regmi<sup>6</sup>, Michael T. Kidd<sup>1, 3</sup>, Adnan Alrubaye<sup>1, 2</sup>

<sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States, <sup>2</sup>POSC-CEMB, University of Arkansas, Fayetteville, Arkansas, United States, <sup>3</sup>POSC, University of Arkansas, Fayetteville, Arkansas, United States, <sup>4</sup>dsm-firmenich, São Paulo, Brazil, <sup>5</sup>dsm-firmenich, Kaiseraugst, Switzerland, <sup>6</sup>Poultry Science, University of Georgia, Athens, Georgia, United States

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The effect of feeding a new dual-strain probiotic on growth performance of Ross 708 male broilers

Kasey E. Young\*<sup>1GS</sup>, Rosana Hirai<sup>1</sup>, Abigail Flores<sup>1</sup>, Camryn Wilder<sup>1</sup>, Austin O. Silva<sup>1</sup>, Addison Elstner<sup>1</sup>, Skylar White<sup>2</sup>, Charles Greenwald<sup>2</sup>, Audrey McElroy<sup>1</sup>

<sup>1</sup>Poultry Science, Texas A&M University, College Station, Texas, United States, <sup>2</sup>NCH Life Sciences, Irving, Texas, United States

**P260**

Effect of synbiotic supplementation on cecal microbiota during exposure to subclinical doses of Fumonisin and Deoxynivalenol in broiler chickens

Joseph Rishitha Dasireddy\*<sup>1GS</sup>, Laharika Kappari<sup>1</sup>, Chasity Pender<sup>2</sup>, Doupovec Barabara<sup>2</sup>, Raj Murugesan<sup>2</sup>, Todd J Applegate<sup>1</sup>, Revathi Shamugasundaram<sup>3</sup>

<sup>1</sup>Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>2</sup>DSM Nutritional Products, Manassas, Virginia, United States, <sup>3</sup>USDA, Athens, Georgia, United States



**P261**

Impact of inclusion of yeast fermentate postbiotic on week-old broiler fecal, cecal, and feed microbiome

Ashley A. Tarcin\*<sup>1GS</sup>, Elena G. Olson<sup>1</sup>, Lindsey A. Wythe<sup>2</sup>, Abe Scheaffer<sup>3</sup>, Steve Ricke<sup>1</sup>

<sup>1</sup>*Animal and Dairy Sciences, University of Wisconsin- Madison, Madison, Wisconsin, United States*, <sup>2</sup>*Department of Poultry Science, Texas A&M University, College Station, Texas, United States*, <sup>3</sup>*Harvest Fuel, Inc., Walhalla, North Dakota, United States*

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Unravelling the Broiler Breeder Paradox: Microbiota-mediated mode of action of probiotics NAPE-EcN

Mallory Zumwalt\*<sup>UG</sup>, Mazette Croom, Sarah Barnes, Rosemary Walzem, Samson Oladokun

*Texas A&M University, Bryan, Texas, United States*

**P263**

Evaluating the effect of administering an *Enterococcus faecium* probiotic spray to newly hatched broiler chicks on the occurrence of bacterial chondronecrosis with osteomyelitis lameness under a *Staphylococcus* challenge model

Abdulaziz Alqahtani\*<sup>1GS</sup>, Anh Do<sup>2</sup>, Amanda Anthney<sup>1</sup>, Khawla S. Alharbi<sup>2</sup>, Andi Asnayanti<sup>1</sup>, Ruvindu Perera<sup>2</sup>, Manel Ben Larbi<sup>4</sup>, Antoine Meuter<sup>3</sup>, Adnan Alrubaye<sup>1</sup>

<sup>1</sup>*Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States*, <sup>2</sup>*POSC-CEMB, University of Arkansas, Fayetteville, Arkansas, United States*, <sup>3</sup>*Nononosis, Vertou, France*, <sup>4</sup>*Tunisia University, Tunis, Tunisia*

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Effect of sodium bisulfate inclusion on pellet durability index of broiler diets

Jose I. Vargas\*<sup>1GS</sup>, Joseph P. Gulizia<sup>1</sup>, Eva G. Guzman<sup>1</sup>, Esteban Rosero<sup>1</sup>, Fabio Valenzuela<sup>1</sup>, Julianna Jespersen<sup>2</sup>, Craig Coufal<sup>2</sup>, Wilmer J. Pacheco<sup>1</sup>

<sup>1</sup>*Poultry Science, Auburn University, Auburn, Alabama, United States*, <sup>2</sup>*Jones-Hamilton Co., Rock Island, Illinois, United States*

**P265**

Effect of a direct fed microbial and enzyme blend on the antioxidant status of broiler chickens during a *Salmonella* Typhimurium challenge

Davis A. Fenster\*<sup>1GS</sup>, Rasha Qudsieh<sup>2</sup>, Jeng-Jie Wang<sup>2</sup>, Ali Calik<sup>3,1</sup>, Rami A. Dalloul<sup>1</sup>

<sup>1</sup>*Poultry Science, University of Georgia, Athens, Georgia, United States*, <sup>2</sup>*Novus International, Inc., Chesterfield, Missouri, United States*, <sup>3</sup>*Animal Nutrition and Nutritional Diseases, Ankara University Faculty of Veterinary Medicine, Ankara, Turkey*

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Assessing the role of dietary fat on basal endogenous amino acid flow and composition, intestinal morphology and cecal short-chain fatty acid profile in broiler chickens

Sujitha Veeraganti\*<sup>GS</sup>, Oluyinka Olukosi

*Poultry Science, University of Georgia, Athens, Georgia, United States*

**P267**

Practical assessment of model accuracy to predict broiler starter-phase production goals when fed varying feed forms

Anna Kathryn Riggs\*<sup>1GS</sup>, Nickki Tillman<sup>2</sup>, Kelley Wamsley<sup>1</sup>

<sup>1</sup>*Mississippi State University, Mississippi State, Mississippi, United States*, <sup>2</sup>*Nutritional Statistics LLC, Buford, Georgia, United States*

**P268**

Impact of the physical structure of feed on macroscopic anatomical changes in the oropharyngeal cavity of broiler chickens

Isabella D. Dias\*<sup>1GS</sup>, Suzete D. Melo Neta<sup>1</sup>, Ana Carolina B. Doi<sup>1</sup>, Maria Letícia B. Mariani<sup>1</sup>, Brenda Carolina P. dos Santos<sup>1</sup>, Guilherme F. Deda<sup>1</sup>, Vivian I. Vieira<sup>1</sup>, Everton L. Krabbe<sup>2</sup>, Alex Maiorka<sup>1</sup>

<sup>1</sup>Animal Science, Federal University of Paraná, Curitiba, Paraná, Brazil, <sup>2</sup>Embrapa Swine and Poultry, Concórdia, Brazil

**P269**

Ahiflower seed and presscake as potential sources of polyunsaturated fatty acids in eggs and nutrients for laying hens during the peak production phase

Roseline O. Ogory\*<sup>GS</sup>, Deborah Adewole

Animal and Poultry Science, University of Saskatchewan, Saskatchewan, Canada, Saskatoon, Saskatchewan, Canada

**P270**

Performance Evaluation of Ross 708 Broilers Fed Positive or Negative Controls

Emmillie Boot\*<sup>GS</sup>, Ramon D. Malheiros

Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States

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Phosphorus digestibility in broiler chickens fed autoclaved faba beans and phytase

Olumide S. Olowe\*<sup>GS</sup>, Olayiwola Adeola

Animal Sciences, Purdue University, West Lafayette, Indiana, United States

**Physiology****P272**

A potential role of the yolk sac tissue as an endocrine organ during embryonic development

Grant G. Bennett\*<sup>GS</sup>, Jordan Castle, Kloie Varnadoe, Laura E. Ellestad

Department of Poultry Science, University of Georgia, Athens, Georgia, United States

**P273**

Early thermal programming and post-hatch baicalein supplementation enhanced immune response in broiler chickens

Sadid Al Amaz\*<sup>GS</sup>, Md Ahsanul Shahid, Rajesh Jha, Birendra Mishra

Human Nutrition Food and Animal Sciences, University of Hawaii at Manoa, Honolulu, Hawaii, United States

**P274**

Effects of chronic heat stress and antibiotic-growth promoter supplementation on ileal morphology and expression of nutrient transporters in modern and legacy broilers

Colin A. Barcelo\*<sup>GS</sup>, Iyanni Stevens, Audrey Knoper, Laura E. Ellestad

Poultry Science, University of Georgia, Pooler, Georgia, United States

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Embryonic thermal manipulation improved gut-brain axis coordination (appetite and taste) with or without heat stress in broiler chickens

Sadid Al Amaz<sup>2,1</sup>, Suman Poudel<sup>1</sup>, Rajesh Jha<sup>1</sup>, Birendra Mishra<sup>1</sup>

<sup>1</sup>Human Nutrition Food and Animal Sciences, University of Hawaii at Manoa, Honolulu, Hawaii, United States, <sup>2</sup>HNFAS, University of Hawaii at Manoa, Honolulu, Hawaii, United States

**P276**

Continuous monitoring of light intensity in commercial broiler houses providing natural light

Justus Illembayo\*<sup>1GS</sup>, John Linhoss<sup>1</sup>, Jeremiah D. Davis<sup>1,2</sup>, Brendan Higgins<sup>1</sup>

<sup>1</sup>Biosystems Engineering, Auburn University, Auburn, Alabama, United States, <sup>2</sup>National Poultry Technology Center, Auburn University, Auburn, Alabama, United States

**P277**

Transcriptional regulation of albumen biosynthesis in the magnum of broiler breeder hens

Prem Lal L. Mahato\*<sup>1GS</sup>, Vedbar Khadka<sup>3</sup>, Kenneth Macklin<sup>2</sup>, Rajesh Jha<sup>1</sup>, Birendra Mishra<sup>1</sup>

<sup>1</sup>Human Nutrition Food and Animal Sciences, University of Hawaii at Manoa, Honolulu, Hawaii, United States, <sup>2</sup>Department of Poultry Science, Mississippi State University, Starkville, Mississippi, United States, <sup>3</sup>Quantitative Health Sciences Tropical Medicine and Medical Microbiology, University of Hawaii at Manoa, Honolulu, Hawaii, United States

**P278**

Methodology of egg white preparation for analysis on benchtop blood analyzer

Catherine Fudge\*<sup>1GS</sup>, Romel Ortiz<sup>1</sup>, Nicolas Mejia Abaunza<sup>2</sup>, Chongxiao Chen<sup>1</sup>

<sup>1</sup>Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>2</sup>Poultry Science, University of Georgia, Lawrenceville, Georgia, United States

**Welfare and Behavior****P279**

Comparative Microstructure of Clinically Lame and Normal Bones of Broilers

Venkata Sessa Reddy Choppa\*<sup>GS</sup>, Hamid Reza Rafieian Naeini, Hemanth Reddy Katha, Woo Kyun Kim

Department of Poultry Science, University of Georgia, Athens, Georgia, United States

**P280**

Deep Learning Model for Automated Key Point Estimation of Cage-Free Chickens

Anjan Dhungana\*<sup>GS</sup>, Xiao Yang, Bidur Paneru, Samin Dahal, Lilong Chai

Department of Poultry Science, University of Georgia, Athens, Georgia, United States

**P281**

Monitoring feather loss using thermoimaging technology in cage-free laying hens

Samin Dahal\*<sup>1GS</sup>, Xiao Yang<sup>1</sup>, Bidur Paneru<sup>2</sup>, Anjan Dhungana<sup>1</sup>, Lilong Chai<sup>1</sup>

<sup>1</sup>Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>2</sup>Poultry Science, University of Georgia, Athens, Georgia, United States

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A short longitudinal evaluation of stress states in two broiler breeds in a pasture poultry system

Aliyah N. Bonner\*<sup>UG</sup>, Ayodeji Aderibigbe

College Agriculture and Food Sciences, Florida A&M University, Tallahassee, Florida, United States

**P283**

Effect of Dietary Tryptophan Supplementation on Tonic Immobility Behavior of Pasture-Raised Broilers Before and After Heat Stress

Jaelen Cherry\*<sup>1GS</sup>, Jennifer Timmons<sup>2</sup>, Shawna Weimer<sup>1</sup>

<sup>1</sup>Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States, <sup>2</sup>Department of Agriculture, Food, and Resource Sciences, University of Maryland - Eastern Shore, Princess Anne, Maryland, United States

**P284**

The relationship between body weight and skeletal traits in a strain of commercial turkey toms

Stephanie Kulbacki\*<sup>1GS</sup>, Nathan Griffith<sup>2</sup>, Gokul Selvaraj<sup>1</sup>, Marisa Erasmus<sup>2</sup>, Luiz Brito<sup>2</sup>, Prafulla Regmi<sup>1</sup>

<sup>1</sup>Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>2</sup>Animal Sciences, Purdue University, West Lafayette, Indiana, United States

**P285**

Validating a methodology for broiler bird activity

Brenda Hernandez Tapia\*<sup>GS</sup>, Katy J. Tarrant

*Animal Science and Agriculture Education, California State University, Fresno, California, United States*

**Pathology****P286**

Coinfection effects of *Histomonas meleagridis* and *Salmonella typhimurium* on *Salmonella* colonization, liver apoptotic genes in Turkey Poults

Hamid Reza Rafieian-Naeini\*<sup>GS</sup>, Venkata Sesha Reddy Choppa, Hemanth Reddy Katha, Seshidhar Reddy Gudidoddi, Woo Kyun Kim

*Department of Poultry Science, University of Georgia, Athens, Georgia, United States*

**P287**

Effect of an herbal product (Vermi) on the embryonation and eggshell integrity of *Heterakis gallinarum*

Lillie Romines\*<sup>1UG</sup>, Catherine Fudge<sup>1</sup>, Dan Gray<sup>2</sup>, Thilo Borchardt<sup>2</sup>, Chongxiao Chen<sup>1</sup>

<sup>1</sup>Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>2</sup>DOSTOFARM GmbH, Westerstede, Germany

**P288**

Effect of an herbal product (Vermi) against *Histomonas meleagridis* in vitro  
Romel Ortiz\*<sup>1UG</sup>, Catherine Fudge<sup>1</sup>, Dan Gray<sup>2</sup>, Thilo Borchardt<sup>2</sup>, Chongxiao Chen<sup>1</sup>

<sup>1</sup>Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>2</sup>DOSTOFARM GmbH, Westerstede, Germany

**P289**

Genotyping *Salmonella* spp. strains of avian origin through Oxford Nanopore Technologies

Tirado Agreda Daniel Wagner\*<sup>GS</sup>, Maria Belen Cevallos Almeida, Maria Ines Baquero Cardenas, Freddy Proaño Pérez, Carlos Gomez, Francis Xavier Acosta Villafuerte, Vallejo Xavier Gerardo Apolo, Natalia Naidelyn Muentes Buenaventura, Marco Cisneros Tamayo

*Facultad de Medicina Veterinaria y Zootecnia, Universidad Central del Ecuador, Quito, Ecuador*

**P290**

Novel sequencing-based method for *E. coli* O-Serogroup typing enhances poultry disease surveillance

Sunita Shrestha\*<sup>1GS</sup>, Linan Jia<sup>1</sup>, Chuan-Yu Hsu<sup>3</sup>, Mark A Arick II<sup>3</sup>, Kelsy Robinson<sup>2</sup>, Li Zhang<sup>1</sup>

<sup>1</sup>Department of Poultry Science, Mississippi State University, Starkville, Mississippi, United States, <sup>2</sup>USDA, Agriculture Research Service, Poultry Research Unit, Starkville, Mississippi, United States, <sup>3</sup>Institute for Genomics, Biocomputing and Biotechnology, Mississippi State University, Starkville, Mississippi, United States

**P291**

Phylogenetic characterization and genotyping of non-S1 Avian Reovirus Genomic Segments

Vicente A. Avila-Reyes\*<sup>1GS</sup>, Kelsey T. Young<sup>3</sup>, Holly Sellers<sup>2</sup>, Morgan L. Cunningham<sup>1</sup>, JoAnna Bowers<sup>1</sup>, Crosby Casto<sup>1</sup>, James Stanton<sup>1</sup>

<sup>1</sup>Pathology, University of Georgia, Athens, Georgia, United States, <sup>2</sup>Population Health, University of Georgia, Athens, Georgia, United States, <sup>3</sup>Biomedical Sciences and Pathobiology, Virginia-Maryland College of Veterinary Medicine, Blacksburg, Virginia, United States

**P292**

Detection of pathogenicity factors in field-isolated *Enterococcus cecorum* strains from chickens across different ages

Thaciane Amaral\*<sup>3GS</sup>, Renata Gomes<sup>1</sup>, Latasha Gray<sup>2</sup>, Philip Yeboah<sup>3</sup>, Demilade I. Ibiwoye<sup>3</sup>, James Higueta<sup>2</sup>, Aaron Forga<sup>2</sup>, Danielle Graham<sup>2</sup>, Lisa Bielke<sup>3</sup>

<sup>1</sup>Escola de Veterinária e Zootecnia, Universidade Federal de Goiás, Goiânia, GO, Brazil, <sup>2</sup>Department of Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States, <sup>3</sup>Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States

**SCAD****P293**

Early postbiotic administration regulates the expression of intestinal genes in broilers during subclinical necrotic enteritis

Bingqi Dong\*<sup>1GS</sup>, Ali Calik<sup>2</sup>, Candice E. Blue<sup>1</sup>, Rami A. Dalloul<sup>1</sup>

<sup>1</sup>Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>2</sup>Animal Nutrition & Nutritional Diseases, Ankara University, Ankara, Ankara, Turkey

**P294**

Immune Gene Expression in Cecal Tonsils, Spleen, and Jejunum Tissue During Coccidiosis Infection in Poults

Demilade I. Ibiwoye\*<sup>1GS</sup>, Philip Yeboah<sup>1</sup>, Carissa Gaghan<sup>2</sup>, Thaciane Amaral<sup>1</sup>, Shelly Nolin<sup>1</sup>, Raveendra Kulkarni<sup>2</sup>, Pradyut Paul<sup>3</sup>, Kimberly Livingston<sup>3</sup>, Lisa Bielke<sup>1</sup>

<sup>1</sup>Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States, <sup>2</sup>Population Health and Pathobiology, North Carolina State University, Raleigh, North Carolina, United States, <sup>3</sup>Optum Immunity, Waterloo, Wisconsin, United States

**P295**

*Eimeria*-induced predisposition of chickens to necrotic enteritis is characterized by increased expression of pro-inflammatory and immunoregulatory genes

Matthew Browning\*<sup>1GS</sup>, Pok Man Chan<sup>2</sup>, Carissa Gaghan<sup>2</sup>

<sup>1</sup>College of Veterinary Medicine, North Carolina State University, Raleigh, North Carolina, United States, <sup>2</sup>Department of Population Health and Pathobiology, College of Veterinary Medicine, North Carolina State University, Raleigh, North Carolina, United States

**P296**

Selective pre-enrichment reduces time to confirmed *Salmonella*-positive isolate in poultry preharvest samples

Amy T. Siceloff\*<sup>GS</sup>, Nikki Shariat

Population Health, University of Georgia, Athens, Georgia, United States

**P297**

Nanopore amplicon sequencing as an alternative for characterizing *Salmonella* complex serovar populations

David Ayala-Velastegui\*<sup>1GS</sup>, Amy T. Siceloff<sup>2</sup>, Nikki Shariat<sup>1</sup>

<sup>1</sup>Population Health, University of Georgia, Athens, Georgia, United States, <sup>2</sup>Population Health, University of Georgia, Athens, Georgia, United States

**P298**

In-vitro screening of turkey host-specific *Lactobacillus* strains possessing immunomodulatory and anti-*Clostridium septicum* properties

Carissa Gaghan\*<sup>1GS</sup>, Sarah O'Flaherty<sup>2</sup>, Ravi Kulkarni<sup>1</sup>

<sup>1</sup>Population Health and Pathobiology, North Carolina State University, Raleigh, North Carolina, United States, <sup>2</sup>North Carolina State University, Raleigh, North Carolina, United States

**P299**

Evaluating the impact of a tannin-based feed additive on bird performance and commercial *Salmonella* vaccine recovery in four-day-old broiler chicks  
William C. Grisham\*<sup>1UG</sup>, Emily Magee<sup>2</sup>, Luis Muñoz<sup>1</sup>, Timothy Cummings<sup>3</sup>, Kalen Cookson<sup>5</sup>, Phil Stayer<sup>4</sup>, Timothy Boltz<sup>1</sup> <sup>1</sup>*Poultry Science, Mississippi State University, Starkville, Mississippi, United States*, <sup>2</sup>*Poultry Science, Mississippi State University, Starkville, Mississippi, United States*, <sup>3</sup>*Zoetis, Parsippany, New Jersey, United States*, <sup>4</sup>*Dr Phil Stayer Poultry Consulting, LLC, Hattiesburg, Mississippi, United States*, <sup>5</sup>*Zoetis, Lawrenceville, Georgia, United States*

**P300**

Differences in cellular and humoral immune responses to a primary and secondary immunization with herpesvirus of turkey (HVT) vaccine in layer pullets  
Allie K. Bowerman\*<sup>UG</sup>, Chrysta N. Beck, Jossie M. Santamaria, Gisela F. Erf  
*Center of Excellence for Poultry Science, University of Arkansas System Division of Agriculture, Fayetteville, Arkansas, United States*

## Poster Sessions – Non-Competition

Moderators: Chrysta Beck, University of Arkansas; Chongxiao Chen, University of Georgia

Monday, January 27, 2025

Time: 4:00-6:00 PM

Room Number: Hall B Foyer

### Environment and Management

#### P301

Orange corn diet decreased serum corticosterone and improved gait, egg production, egg quality and fertility of breeder Pekin ducks exposed to heat stress

Esther M. Oluwagbenga<sup>1</sup>, Evan Rocheford<sup>2</sup>, Torbert Rocheford<sup>1</sup>, Darrin Karcher<sup>1</sup>, Jenna M. Schober<sup>1</sup>, Melanie Bergman<sup>1</sup>, Serena Wesley<sup>1</sup>, Gregory S. Fraley<sup>\*1</sup>

<sup>1</sup>Purdue University, West Lafayette, Indiana, United States, <sup>2</sup>Nutramaize, West Lafayette, Indiana, United States

#### P302

Investigation of poultry manure removal efficiency and volume estimation on grooved-floor panels

Siya Chen<sup>\*2</sup>, Yu Wang<sup>1</sup>, Gregory Archer<sup>1</sup>, Ziteng Xu<sup>1</sup>

<sup>1</sup>Poultry Science, Texas A&M University, Bryan, Texas, United States, <sup>2</sup>Texas A&M University, College Station, Texas, United States

#### P303

Analysis of Nine Laying Hen Production in Cage and Cage-Free Environments: 41<sup>st</sup> North Carolina Layer Performance and Management Test

Ishab Poudel, Taylor O'Lear Reid, Becca Wysocky, Kenneth Anderson<sup>\*</sup>  
*Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States*

#### P304

Assessing utilization of platform enrichments in broilers by introducing the platforms at different ages

Jose Millan<sup>\*</sup>, Katy J. Tarrant

*California State University, Fresno, Fresno, California, United States*

#### P305

Standardizing microbiome practices of poultry for practical application

Jean E. de Oliveira<sup>\*10</sup>, Diana Ayala<sup>1</sup>, Sami Dridi<sup>2</sup>, Daniel Grum<sup>1</sup>, Tim Johnson<sup>3</sup>, Jannigje G. Kers<sup>4</sup>, Michael Kogut<sup>5</sup>, Joshua M. Lyte<sup>6</sup>, Joshua Rehberger<sup>7</sup>, Mitiku Seyoum<sup>2</sup>, Alexandra H. Smith<sup>7</sup>, Guolong Zhang<sup>8</sup>, Monika Proszkowiec-Weglarz<sup>9</sup>

<sup>1</sup>Purina Animal Nutrition Center, Land O'Lakes, Gray Summit, Missouri, United States, <sup>2</sup>Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States, <sup>3</sup>Veterinary and Biomedical Sciences, University of Minnesota, Saint Paul, Minnesota, United States, <sup>4</sup>Faculty of Veterinary Medicine, Utrecht University, Utrecht, Netherlands, <sup>5</sup>Southern Plains, Agricultural Research Center USDA-ARS, College Station, Texas, United States, <sup>6</sup>Poultry Production and Product Safety Research, Agricultural Research Service, USDA, Fayetteville, Arkansas, United States, <sup>7</sup>Animal Nutrition, Arm and Hammer, Waukesha, Wisconsin, United States, <sup>8</sup>Department of Animal and Food Sciences, Oklahoma State University, Stillwater, Oklahoma, United States, <sup>9</sup>Animal Biosciences Biotechnology Laboratory, USDA-ARS, Beltsville, Maryland, United States, <sup>10</sup>Core R&D Nutrition, Cargill R&D Centre Europe, Vilvoorde, Belgium

#### P306

The impact of group size and spiking on fertility and hatchability in broiler breeder flocks

Patricia Quino<sup>\*</sup>, Marcela Quino, Madison Berger, Kristian Almendares, Olivia McGuire, Nicole Dundur, Emshe Alvarado, Bethany Baker-Cook, Charlene Hanlon

*Department of Poultry Science, Auburn University, Auburn, Alabama, United States*

**P307**

Impact of Restricted Feeding Regimens on the Fertility and Hatchability of Broiler Breeder Flocks

Kristian Almendares\*<sup>1</sup>, Kristin Diehl<sup>2</sup>, Brenda Flack<sup>3</sup>, Madison Berger<sup>1</sup>, Patricia Quino<sup>1</sup>, Olivia McGuire<sup>1</sup>, Charlene Hanlon<sup>1</sup>

<sup>1</sup>Department of Poultry Science, Auburn University, Auburn, Alabama, United States, <sup>2</sup>Beltsville Agricultural Research Center, USDA-ARS, Beltsville, Maryland, United States, <sup>3</sup>Cobb-Vantress, Siloam Springs, Arkansas, United States

**P308**

The effects of acidifying agents on the growth, antimicrobial resistance, and plasmid genome of *Salmonella* Infantis

Sohyun Cho\*<sup>1</sup>, Taejung Chung<sup>1</sup>, Gregory Zock<sup>1</sup>, Adelumola Oladeinde<sup>1</sup>, Michael Rothrock<sup>1</sup>, Xiang Li<sup>1</sup>, Jodie Lawrence<sup>1</sup>, Walid G. Al Hakeem<sup>1,2</sup>

<sup>1</sup>USDA-ARS, Athens, Georgia, United States, <sup>2</sup>ORISE, Oak Ridge, Tennessee, United States

**P309**

Could a specific blend of essential oils and oleoresins of spices be part of a nutritional strategy to lower broiler feed environmental footprint?

Guillaume Desrousseaux<sup>1</sup>, Ivan Girard<sup>2</sup>, Alain Autret<sup>3</sup>, Jean François Gabarrou\*<sup>1</sup>

<sup>1</sup>Animal Care, Phodé, Terssac, France, <sup>2</sup>Probiotech, Quebec, Quebec, Canada, <sup>3</sup>DuraConsult, Toulouse, France

**P310**

Effect of biochar litter treatment on cecal microbiome composition of broiler chickens

Kelsy Robinson\*<sup>1</sup>, Stephanie Whitham<sup>1</sup>, Joseph Purswell<sup>1</sup>, Jeffrey Evans<sup>1</sup>, Maryam Mohammadi-Aragh<sup>2</sup>

<sup>1</sup>Poultry Research, USDA-ARS, Starkville, Mississippi, United States, <sup>2</sup>Mississippi State University, Mississippi State, Mississippi, United States

**P311**

Evolution of Brown breeder pullet hatchability from 2016 to 2023 and influencing factors

Caleb M. Marshall\*<sup>1</sup>, Daniel Valbuena<sup>2</sup>, Edgar O. Oviedo-Rondón<sup>1</sup>

<sup>1</sup>Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States, <sup>2</sup>Hy-Line International, Des Moines, Iowa, United States

**Food Safety****P312**

Synergistic effects of peracetic acid combined with other oxidizing sanitizers approved for use in poultry meat processing on five serotypes of *Salmonella enterica* in pure culture

Elizabeth McMillan\*<sup>1</sup>, Jaci Hawkins<sup>2</sup>, Eric S. Adams<sup>1</sup>, Quentin Read<sup>3</sup>, Trevor Mitchell<sup>2</sup>, Anthony Pokoo-Aikins<sup>2</sup>, Caitlin Harris<sup>1</sup>, Michael D. Hughes<sup>1</sup>, Anthony Glenn<sup>2</sup>, Richard Meinersmann<sup>1</sup>, Jonathan Frye<sup>1</sup>

<sup>1</sup>Poultry Microbiological Safety and Processing Research Unit, USDA-ARS, Athens, Georgia, United States, <sup>2</sup>Toxicology and Mycotoxin Research Unit, USDA-ARS, Athens, Georgia, United States, <sup>3</sup>Southeast Area, USDA-ARS, Raleigh, North Carolina, United States

**P313**

A computer vision based automatic system for egg grading and defect detection in cage-free facilities

Xiao Yang, Ramesh Bist, Sachin Subedi\*, Lilong Chai  
University of Georgia, Athens, Georgia, United States

**P314**

*In vitro* Testing for Effectiveness Against *Salmonella* of Two Natural Products for Litter Application

Virginia Baxter\*<sup>1</sup>, Charles Hofacre<sup>1</sup>, Matthew K. Jones<sup>1</sup>, Lanny Weaver<sup>2</sup>, Earnie Porta<sup>2</sup>, Neil Teevan<sup>2</sup>

<sup>1</sup>Southern Poultry Research Group, Watkinsville, Georgia, United States, <sup>2</sup>Arkion Life Sciences, New Castle, Delaware, United States



**P315**

Local calibrations for the monitoring of nutritional quality of plant protein meals by using Near Infrared Reflectance Spectroscopy

A.B.M. Khaleduzzaman<sup>2</sup>, Shariful Haque<sup>1</sup>, Zobaidul Kabir<sup>1</sup>, H.M. Salim<sup>2</sup>  
<sup>1</sup>Livestock Unit, Ministry of Fisheries and Livestock (MoFL), Dhaka, Dhaka, Bangladesh, <sup>2</sup>Department of Livestock Services, Director, Production, Dhaka, Dhaka, Bangladesh

**P316**

Salmonella Reduction Efficacy and Nutritional Influence of In-Feed Antimicrobial Agents with or without Sodium Bisulfate

Matthew K. Jones<sup>\*2</sup>, Charles Hofacre<sup>2</sup>, Virginia Baxter<sup>2</sup>, Roy Berghaus<sup>1</sup>, Adam J. Davis<sup>3</sup>, Juan Suarez<sup>4</sup>, Craig Coufal<sup>4</sup>, Julianna Jespersen<sup>4</sup>  
<sup>1</sup>Department of Population Health, College of Veterinary Medicine, University of Georgia, Athens, Georgia, United States, <sup>2</sup>Southern Poultry Research Group, Inc., Watkinsville, Georgia, United States, <sup>3</sup>Department of Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>4</sup>Jones-Hamilton Co., Walbridge, Ohio, United States

**P317**

Microbial Volatile Organic Compounds (mVOCs) as Early Indicators of Contamination in Incubating Poultry Eggs

Stephanie Richter<sup>\*1</sup>, Christopher Heist<sup>1</sup>, Olga Kemenova<sup>1</sup>, Daniel Sabo<sup>1</sup>, Caitlin Harris<sup>2</sup>

<sup>1</sup>Georgia Tech Research Institute, Atlanta, Georgia, United States, <sup>2</sup>USDA-ARS, Athens, Georgia, United States

**P318**

Use of a yeast blend product to mitigate *Salmonella* Enteritidis in laying hens

Carlos A. Guardado<sup>\*1</sup>, Pratima Adhikari<sup>1</sup>, Fozol Ovi<sup>2</sup>, Theresia Lavergne<sup>3</sup>, Charlie Elrod<sup>3</sup>

<sup>1</sup>Poultry Science, Mississippi State, Starkville, Mississippi, United States, <sup>2</sup>PantheraVax, Ames, Iowa, United States, <sup>3</sup>Natural Biologics, Inc., Newfield, New York, United States

**P319**

A study comparing vaccination strategies to protect long-lived birds against *Salmonella* Enteritidis and *S. Infantis* using commercially licensed products

Kalen Cookson<sup>\*</sup>, John Dickson, Jon Schaeffer  
Zoetis, Lawrenceville, Georgia, United States

**P320**

Evaluation of sensory qualities, consumer acceptance, and microbiological aspects of cold-smoked eggs with oak and cherry wood chips

Ahmet Y. Pekel<sup>\*1</sup>, Alp E. Yildiz<sup>2</sup>, Abdurrahman Kizil<sup>1</sup>, Ali Aydin<sup>2</sup>

<sup>1</sup>Department of Animal Nutrition and Nutritional Diseases, Istanbul University-Cerrahpasa, Faculty of Veterinary Medicine, Istanbul, Avcilar, Turkey, <sup>2</sup>Department of Food Hygiene and Technology, Istanbul University-Cerrahpasa, Faculty of Veterinary Medicine, Istanbul, Avcilar, Turkey

**P321**

Effect of different supplementation methods of a triple strain *Bacillus*-based probiotic on *Salmonella* colonization and carcass contamination in broilers

Hanseu Ko<sup>\*1</sup>, Indira Neupane<sup>1</sup>, Venkata Prathap Reddy Keshavareddy<sup>1</sup>, Antoine Meuter<sup>2</sup>, Meghan Schwartz<sup>2</sup>, Woo Kyun Kim<sup>1</sup>

<sup>1</sup>Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>2</sup>Novonosis, Milwaukee, Wisconsin, United States

**P322**

Random Forest Modeling to Identify Key Farm to Fork Factors Influencing *Campylobacter* Level in Pastured Poultry Systems

Minho Kim<sup>\*1</sup>, Walid G. Al Hakeem<sup>2</sup>, Michael Rothrock<sup>1</sup>

<sup>1</sup>USDA-ARS, Athens, Georgia, United States, <sup>2</sup>ORISE-USDA, Athens, Georgia, United States

**P323**

Effect of chicken breed on *Campylobacter* and *Salmonella* load and prevalence in pasture-raised farms

Walid G. Al Hakeem\*<sup>1</sup>, Minh Kim<sup>2</sup>, Sohyun Cho<sup>3</sup>, Xiang Li<sup>4</sup>, Adelumola Oladeinde<sup>2</sup>, Michael Rothrock<sup>2</sup>

<sup>1</sup>ORISE-USDA, Athens, Georgia, United States, <sup>2</sup>USDA-ARS, Athens, Georgia, United States, <sup>3</sup>Egg and Poultry Production Safety Research Unit, USDA, Athens, Georgia, United States, <sup>4</sup>USDA-ARS, Athens, Georgia, United States

**P324**

Foodborne pathogens prevalence, load and ecology on pasture-raised broilers processed on-farm or at a small USDA-inspected facility

Walid G. Al Hakeem\*<sup>1</sup>, Taejung Chung<sup>2</sup>, Minh Kim<sup>2</sup>, Adelumola Oladeinde<sup>2</sup>, Michael Rothrock<sup>2</sup>

<sup>1</sup>ORISE-USDA, Athens, Georgia, United States, <sup>2</sup>USDA-ARS, Athens, Georgia, United States

**P325**

*E. coli* diversity along the Farm-to-Fork continuum of pastured poultry flocks in the Southeastern United States

Walid G. Al Hakeem\*<sup>1</sup>, Minh Kim<sup>2</sup>, Michael Rothrock<sup>2</sup>

<sup>1</sup>ORISE-USDA, Athens, Georgia, United States, <sup>2</sup>USDA-ARS, Athens, Georgia, United States

**P326**

Key Farm to Fork Factors Influencing *E. coli* Level in Pastured Poultry Production

Minh Kim\*<sup>1</sup>, Walid G. Al Hakeem<sup>2</sup>, Michael Rothrock<sup>1</sup>

<sup>1</sup>USDA-ARS, Athens, Georgia, United States, <sup>2</sup>ORISE-USDA, Athens, Georgia, United States

**P327**

Impact of sodium bisulfate and water activity on *Salmonella* survival in poultry litter

Yabaiz Tahir\*<sup>1</sup>, Justin Lowery<sup>1</sup>, Mary Mendoza<sup>1</sup>, Christina S. Sigmon<sup>1</sup>, Jeyam Subbiah<sup>2</sup>, Nanje Gowda<sup>3</sup>, Craig Coufal<sup>4</sup>, Lin L. Walker<sup>1</sup>

<sup>1</sup>Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States, <sup>2</sup>Dale Bumpers College of Agricultural, Food and Life Sciences Food Science, University of Arkansas System Division of Agriculture, Fayetteville, Arkansas, United States, <sup>3</sup>Department of Food Science, University of Arkansas Division of Agriculture, Fayetteville, Arkansas, United States, <sup>4</sup>Jones-Hamilton Co., Walbridge, Ohio, United States

**P328**

16s amplicon sequence analysis finds comparable microbial community dynamics in *Salmonella* Heidelberg-challenged broilers with or without antibiotic alternatives

Dhananjai Muringattu Prabhakaran\*, Shijina Manjankattil, Claire Peichel, Anup K. Johnny

*Animal Science, University of Minnesota, Saint Paul, Minnesota, United States*

**P329**

*Propionibacterium freudenreichii* and *S. Typhimurium* vaccine elicit comparable colonization resistance to multidrug-resistant *Salmonella* Infantis in broiler chickens

Dhananjai Muringattu Prabhakaran\*<sup>1</sup>, Amritha Ajayan<sup>1</sup>, Hamza Javid<sup>1</sup>, Tim Johnson<sup>2</sup>, Anup K. Johnny<sup>1</sup>

<sup>1</sup>Animal Science, University of Minnesota, Saint Paul, Minnesota, United States, <sup>2</sup>Department of Veterinary and Biomedical Sciences, University of Minnesota, Saint Paul, Minnesota, United States

## Processing and Products

### P330

The effect of rearing systems and heat treatments on liquid egg white functionality

Leah Dexter-Boone\*<sup>1</sup>, Skye Freeland<sup>1</sup>, Masahiko Taniguchi<sup>3</sup>, Haotian Zheng<sup>2</sup>, Kenneth Anderson<sup>1</sup>, Taylor O'Lear Reid<sup>1</sup>, Aaron Kiess<sup>1</sup>, Yan L. Campbell<sup>1</sup>

<sup>1</sup>Prestage Family Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States, <sup>2</sup>Department of Food, Bioprocessing and Nutrition Sciences, North Carolina State University, Raleigh, North Carolina, United States, <sup>3</sup>Department of Chemistry, North Carolina State University, Raleigh, North Carolina, United States

### P331

Meat quality of hens fed an unblanched high-oleic peanut diet

Afsana Rahaman Munmun\*<sup>1,2</sup>, Jean C. Caceres<sup>3</sup>, Christina S. Sigmon<sup>2</sup>, Ishab Poudel<sup>4</sup>, Thien Vu<sup>5</sup>, Becca Wysocky<sup>3</sup>, Ramon Malheiros<sup>2</sup>, Kenneth Anderson<sup>2</sup>, Ondulla T. Toomer<sup>5</sup>, Yan L. Campbell<sup>2</sup>

<sup>1</sup>Food, Bioprocessing & Nutrition Sciences Department, North Carolina State University, Raleigh, North Carolina, United States, <sup>2</sup>Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States, <sup>3</sup>Prestage Poultry Science Department, North Carolina State University, Raleigh, North Carolina, United States, <sup>4</sup>Poultry Science, Mississippi State University, Raleigh, North Carolina, United States, <sup>5</sup>United States Department of Agriculture, Raleigh, North Carolina, United States

### P332

Effect of alternative additives to formaldehyde on reducing *Salmonella* in animal feed

Adrieli Biava\*<sup>1</sup>, Silvana de Castro Caldas<sup>2</sup>, Liris Kindlein<sup>1</sup>

<sup>1</sup>UFRGS, Encantado, RS, Brazil, <sup>2</sup>UFRGS, Encantado, RS, Brazil

## Metabolism and Nutrition: Amino Acids and Enzymes

### P333

Productive energy (Arkansas net energy) as a key indicator: evaluating full-fat soybean meal for enhanced broiler protein gain and feed conversion

Abdullah Scott<sup>2,1</sup>, Cole Umberson<sup>2</sup>, Callie Selby<sup>2</sup>, Jordan Weli<sup>2</sup>, Nawin Suesuttajet<sup>2</sup>, Ehsan Sheikhsamani<sup>2</sup>, Diego A. Martinez\*<sup>2</sup>, Mian Riaz<sup>3</sup>, Craig Coon<sup>2</sup>

<sup>1</sup>Animal Resources, Salahaddin University, Erbil, Erbil, Iraq, <sup>2</sup>University of Arkansas, Fayetteville, Arkansas, United States, <sup>3</sup>Texas A&M University, College Station, Texas, United States

### P334

Understanding the branched-chain amino acid interactions on bone morphology of pullets at 18 weeks of age

Charis A. Waters\*<sup>1</sup>, Roshan Adhikari<sup>2</sup>, Jason T. Lee<sup>2</sup>, Deependra Paneru<sup>3</sup>, Woo Kyun Kim<sup>3</sup>, Ruben Kriseldi<sup>4</sup>, Michael Elliot<sup>5</sup>, Li Zhang<sup>1</sup>, Kelley Wamsley<sup>1</sup>, Pratima Adhikari<sup>1</sup>

<sup>1</sup>Department of Poultry Science, Mississippi State University, Mississippi State, Mississippi, United States, <sup>2</sup>CJ Bio America, Downers Grove, Illinois, United States, <sup>3</sup>Department of Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>4</sup>Aviagen, Huntsville, Alabama, United States, <sup>5</sup>A&E Nutrition Services, LLC, Lititz, Pennsylvania, United States

### P335

The effect of a sfericase protease on protein solubility of soybean meal and trypsin inhibitor degradation

Camila d. Cardoso\*<sup>1</sup>, Diogo Rosso<sup>2</sup>, Tine V. Jensen<sup>2</sup>, Jacqueline C. de Souza<sup>1</sup>, Vitor B. Fascina<sup>3</sup>

<sup>1</sup>Novonosis LA, Araucária, PR, Brazil, <sup>2</sup>Novonosis A/S, Lyngby, Denmark, <sup>3</sup>dsm-firmenich, São Paulo, Brazil

**P336**

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

Kamel Mahmoud\*<sup>1</sup>, Basheer Nusairat<sup>2</sup>, Omar Al-Qudah<sup>1</sup>

<sup>1</sup>*Animal Production, Jordan University of Science and Technology, Irbid, Jordan*, <sup>2</sup>*Department of Animal Production, Jordan University of Science and Technology, Irbid, Jordan*

**P337**

Blood biochemistry influenced by dietary available phosphorus and phytase supplementation

Xaviere Rousseau\*<sup>1</sup>, Gilson Gomes<sup>1</sup>, Michelle Stewart<sup>1</sup>, Mohammad Pilevar<sup>2</sup>, Bhargavi Kasireddy<sup>2</sup>, Oluyinka Olukosi<sup>2</sup>

<sup>1</sup>*AB Vista, Marlborough, United Kingdom*, <sup>2</sup>*Poultry Science, University of Georgia, Athens, Georgia, United States*

**Metabolism and Nutrition: Feed Additives****P338**

Fructooligosaccharides dose optimization for improving growth performance and intestinal development in broiler chickens

Viviana Parada Roa, Alvaro Uribe-Serrano, Blanca C. Martinez, Loufrantz Parra-Mendez, Jaime A. Angel-Isaza\*

*Unidad de Innovación Y Desarrollo Biotecnológico, Promitec Santander SAS, Bucaramanga, Colombia*

**P339**

Enhancing broiler chicken growth, immunological response, and intestinal morphology through organic copper supplementation combined with synbiotics

Mohsen Afsharmanesh\*

*Department of Animal Science, Shahid Bahonar University of Kerman, Kerman, Kerman, Iran (the Islamic Republic of)*

**P340**

Evaluation of a sodium butyrate stabilized by calcium salts against a fat coated calcium butyrate on broiler performance and economic profitability

Octavi C. Balaña\*, Housseem Kadardar, Ekaitz Maguregui

*Technical, Iqusol, Barcelona, Catalonia, Spain*

**P341**

Efficacy of a liquid solution containing grape and olive extracts on broiler chickens challenged by aflatoxin B1, ochratoxin A and fumonisins: Effects on animal performance, biochemical and liver gene analysis

Insaf Riahi\*<sup>1</sup>, Antonella Della Badia<sup>1</sup>, Catalina Nicholls<sup>1</sup>, Raquel Codina<sup>1</sup>, Eva León<sup>1</sup>, Amrita K. Dhara<sup>2</sup>, Anirvid Sarkar<sup>2</sup>, Sayantani Arora<sup>2</sup>, Sudipto Haldar<sup>2</sup>

<sup>1</sup>*Technical Department BIONTE Nutrition S.L., Reus, Tarragona, Spain*, <sup>2</sup>*Agrivet Research and advisory P Ltd., Lake Town, South Dumdum, West Bengal, India*

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A combination of essential oils from oregano, cinnamon, and clove improves growth performance, gut morphology, and intestinal barrier function in broilers

In H. Kim\*<sup>2</sup>, Md Raihanul Hoque<sup>1</sup>, Chae Bin Lim<sup>1</sup>, Lane Pineda<sup>3</sup>, Marlien de Kock<sup>3</sup>, Ellen Hambrecht<sup>3</sup>

<sup>1</sup>*Animal Biotechnology, Dankook University, Cheonan, South Korea, Korea (the Republic of)*, <sup>2</sup>*Animal Biotechnology, Dankook University, Cheonan, Choongnam, Korea (the Republic of)*, <sup>3</sup>*Trouw Nutrition, Amsterdam, Netherlands*

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Influence of *bacillus*-based probiotic and yeast cell wall-derived prebiotic supplementation across various laying stages on performance, egg quality, and immune response

Ala E. Abudabos\*

*Agriculture, Alcorn State University, Lorman, Mississippi, United States*

**P344**

Bacterial competitive exclusion product compatibility and synergy with 3 *Salmonella* live vaccines

Alison Johnson<sup>2</sup>, Sally Gibson<sup>2</sup>, Florence Barbe<sup>1</sup>, Audrey Sacy<sup>1</sup>, Anaïs Nozeran<sup>1</sup>, Pierre Lebreton<sup>\*1</sup>, Eric Chevaux<sup>1</sup>, Victor Pain<sup>3</sup>

<sup>1</sup>Lallemand SAS, Blagnac Cedex, France, <sup>2</sup>Lallemand SAS UK, Malvern, United Kingdom, <sup>3</sup>SOCSA Elevage, L'Union, France

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Compatibility of a competitive exclusion solution with a *Salmonella* live vaccine administered at different ages

Victor Pain<sup>2</sup>, Jonny Harrison<sup>1</sup>, Anaïs Nozeran<sup>1</sup>, Sophie Huppert<sup>1</sup>, Pierre Lebreton<sup>\*1</sup>, Florence Barbe<sup>1</sup>, Audrey Sacy<sup>1</sup>

<sup>1</sup>Lallemand SAS, Blagnac cedex, France, <sup>2</sup>SOCSA Elevage, L'Union, France

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Effects of live yeast *Saccharomyces cerevisiae boulardii* on broilers growth performances and food safety

Dariusz Mikulski<sup>2</sup>, Jan Jankowski<sup>2</sup>, Pierre Lebreton<sup>\*1</sup>, Florence Barbe<sup>1</sup>, Vanessa Demey<sup>1</sup>

<sup>1</sup>Lallemand SAS, Blagnac Cedex, France, <sup>2</sup>Department of Poultry Science, Faculty of Animal Bioengineering, University of Warmia and Mazury in Olsztyn, Olsztyn, Poland

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Comparative Effects of Ionophore Anticoccidials with or without the addition of a QY phytogetic on Performance and Coccidia Lesion Scores in Broilers Challenged with Contemporary Coccidia Strains

Luis B. Gomez<sup>\*1</sup>, Chad Malinak<sup>1</sup>, Blair Telg<sup>1</sup>, Sandra Bonaspetti<sup>1</sup>, Vasil Stanev<sup>1</sup>, Ana Villegas<sup>1</sup>, Ashley Halowell<sup>1</sup>, Brett Lumpkins<sup>2</sup>

<sup>1</sup>Technical Services, Phibro Animal Health, Watkinsville, Georgia, United States, <sup>2</sup>Southern Poultry Research and Feed, Athens, Georgia, United States

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Impact of sodium bisulfate supplementation, alone or in combination with in-feed anticoccidials, on broiler performance during a coccidiosis challenge

Bradley Turner<sup>2</sup>, Craig Coufal<sup>1</sup>, Julianna Jespersen<sup>\*1</sup>

<sup>1</sup>Jones-Hamilton Co., Rock Island, Illinois, United States, <sup>2</sup>Poultry Research Partners, LLC, Hoschton, Georgia, United States

**P349**

Efficacy of gut microbiota modulators from yeasts on performance of broiler chickens under a necrotic enteritis challenge

Elise Nacer-Khodja<sup>\*1</sup>, Raquel Pereira<sup>1</sup>, Amrita K. Dhara<sup>2</sup>, Maria Angeles Rodriguez<sup>1</sup>, Mariel Neves Tavares<sup>1</sup>

<sup>1</sup>Olmix SA, Brehan, France, <sup>2</sup>Agrivet Research & Advisory, Kolkata, India

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Bioactive compounds from Passion fruit seed oil act as a natural antioxidant in laying hens

Lais Cordeiro, Elis O. Castillo, Gabrieli A. Lima, Paola A. Rodrigues, Joyce A. Silva, Júlia d. Lopes, Luane B. Andrade, William d. Xavier, Matheus G. Guimarães, José R. Sartori<sup>\*</sup>

Animal Breeding and Nutrition, UNESP, FMVZ, Botucatu, SP, Brazil

**P351**

Effects of Pearlzyme® (Protease) supplementation on growth performance, nitrogen-corrected apparent metabolizable energy, and amino acid digestibility in broiler chickens fed reduced crude protein and amino acid diets

Deependra Paneru<sup>\*</sup>, Oscar Tejeda, Woo Kyun Kim

Department of Poultry Science, University of Georgia, Athens, Georgia, United States

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Effects of Pearlzyme® (Protease) supplementation on growth performance, nutrient utilization, and immune response in broiler chickens

Deependra Paneru\*, Venkata Sesha Reddy Choppa, Woo Kyun Kim  
*Department of Poultry Science, University of Georgia, Athens, Georgia, United States*

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Replacement of choline chloride with natural choline in broiler chicken diets  
Bernardo F. Iglesias\*<sup>1,2</sup>, Maria Viviana Charriere<sup>1</sup>, Virginia Fain Binda<sup>1</sup>,  
Silvina Pinto<sup>3</sup>, Gonzalo Vicente<sup>4</sup>, Christian Vagedes<sup>4</sup>

<sup>1</sup>Sección Avicultura, Instituto Nacional de Tecnología Agropecuaria - INTA, Pergamino, Buenos Aires, Argentina, <sup>2</sup>Área de Producción Animal, UNNOBA, Pergamino, Buenos Aires, Argentina, <sup>3</sup>Fac. de Cs. Veterinarias, Universidad de Buenos Aires, Buenos Aires, Argentina, <sup>4</sup>Adinnova, Coronda, Santa Fe, Argentina

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Understanding the effectiveness of short and medium chain fatty acid glycerides in Cocci-Challenged broilers: a 57-day commercial field evaluation

Ariel Bergeron\*, Rob Shirley, Nicholas P. Evans  
*Adisseo USA, Alpharetta, Georgia, United States*

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Efficacy of a toxin binder in mitigating aflatoxin-induced damage in broiler chickens

Mariana Ornaghi\*, Caio Tellini, Rodrigo Bressan, Bruna Troian, Jéssica Zandonai, Jociane Boeck  
*Research and Development, Safeeds, Cascavel, Paraná, Brazil*

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Enhancing broiler health and performance: toxin binders as a solution against fumonisin-induced damage

Mariana Ornaghi<sup>1</sup>, Maigel Dreyer<sup>1</sup>, Andressa Flores<sup>1</sup>, Mayara Gall<sup>1</sup>, Osmair Stuaní\*<sup>2,1</sup>, Ricardo Castilho<sup>1</sup>

<sup>1</sup>Research and Development, Safeeds, Cascavel, Paraná, Brazil, <sup>2</sup>Safeeds, Cascavel, Paraná, Brazil

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Evaluating the impact of probiotic and multivalent vaccination strategies in mitigating BCO lameness using a hybrid challenge model

Khawla S. Alharbi\*<sup>1</sup>, Amanda Anthney<sup>1</sup>, Ruvindu Perera<sup>1</sup>, Reginald Onyema<sup>2</sup>, Sara Reichelt<sup>2</sup>, Antoine Meuter<sup>3</sup>, Palmy Jesudhasan<sup>4</sup>, Adnan Alrubaye<sup>1</sup>

<sup>1</sup>Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States, <sup>2</sup>Aviagen, Salisaw, Oklahoma, United States, <sup>3</sup>Novonesis, Lyngby, Denmark, <sup>4</sup>USDA, Fayetteville, Arkansas, United States

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Effect of early-life electrolyte supplementation on broilers under commercial housing conditions

Caio Tellini\*<sup>2</sup>, Mariana Ornaghi<sup>2</sup>, Francisco Bertoli<sup>1</sup>, Juliano Sganzerla<sup>3</sup>, Carla Rodrigues<sup>3</sup>

<sup>1</sup>Safeeds, Cascavel, Brazil, <sup>2</sup>Research and Development, Safeeds, Cascavel, Paraná, Brazil, <sup>3</sup>Departamento Agropecuária, Frangos Pioneiro Ind e Com Ltda, Távora, Paraná, Brazil

**P359**

Supplementation of a synbiotic improves the growth performance of broiler chickens submitted to coccidiosis vaccination

Cristiano Bortoluzzi\*<sup>1</sup>, Chasity Pender<sup>2</sup>

<sup>1</sup>dsm-firmenich, College Station, Texas, United States, <sup>2</sup>DSM Nutritional Products, Manassas, Virginia, United States

**P360**

The effect of NCH Direct-Fed Microbes incorporated into poultry feed with a coccidia vaccine program

Addison Elstner\*<sup>1</sup>, Rosana Hirai<sup>1</sup>, Austin O. Silva<sup>2</sup>, Skylar White<sup>3</sup>, Charles Greenwald<sup>3</sup>, Audrey McElroy<sup>1</sup>

<sup>1</sup>Poultry Science, Texas A&M University, College station, Texas, United States, <sup>2</sup>Poultry Science, Texas A&M University, Bryan, Texas, United States, <sup>3</sup>NCH Technology, College station, Texas, United States

**P361**

A proprietary blend of Phenylpropanoid and vanilloid oleoresins ameliorate growth performance of broilers raised with non-medically important antibiotics (NMIA)

Bertrand Medina\*<sup>1</sup>, Stijn Bruwier<sup>2</sup>, Ivan Girard<sup>1</sup>

<sup>1</sup>Probiotech International Inc., St-Hyacinthe, Quebec, Canada, <sup>2</sup>PONCO Poultry Research Station, Vlierden, Netherlands

**P362**

Potential of antioxidant defenses in broilers with a standardized dry grape extract supplementation

Paul Engler\*<sup>1,2</sup>, Damian Bien<sup>3</sup>, Sekhou Cissé<sup>1,2</sup>, Sławomir Jaworski<sup>4</sup>, Agata Lange<sup>4</sup>, Patrycja Ciborowska<sup>5</sup>, Anna Zalewska<sup>5</sup>, Jakub Urban<sup>5</sup>, Monika Michalczuk<sup>5</sup>, Mohammed el Amine Benarbia<sup>1,2</sup>, Arkadiusz Matuszewski<sup>3</sup>

<sup>1</sup>Nor-Feed, Beaucaouzé, France, <sup>2</sup>FeedInTech, Angers, France, <sup>3</sup>Institute of Animal Sciences, Warsaw University of Life Sciences, Warsaw, Poland, <sup>4</sup>Department of Animal Breeding, Instytut Nauk o Zwierzętach SGGW w Warszawie, Warsaw, Poland, <sup>5</sup>Institute of Biology, Warsaw University of Life Sciences, Warsaw, Poland

**P363**

Effects of different dose of chestnut extract on performance and intestinal health in broilers exposed to *Clostridium perfringens* and coccidia challenge

Clarisse Techer\*<sup>1</sup>, William Lambert<sup>1</sup>, André N. Mayer<sup>3</sup>, Eveline Berwanger<sup>3</sup>, Jovanir Fernandes<sup>2</sup>

<sup>1</sup>miXscience, Bruz, France, <sup>2</sup>UFPR Federal University of Parana, Parana, Brazil, <sup>3</sup>Salus Animal Nutrition, São Paulo, Brazil

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Evaluation of a quillaja saponin-based product, Enviro QS™<sub>DF</sub>, against a quillaja and yucca saponin-based product or a yucca saponin-based product in broilers

Maci Oelschlager\*, Jason McCamy, Megan Koppen, Manuel Da Costa  
Cargill Animal Nutrition, Wayzata, Minnesota, United States

**P365**

Effect of dietary supplementation of a postbiotic and phytogetic blend on laying performance and colibacillosis in laying hens challenged with avian pathogenic *Escherichia coli* Serotype O78

Hanseon Ko\*<sup>1</sup>, Deependra Paneru<sup>1</sup>, Manuel Da Costa<sup>2</sup>, Vivek Kuttappan<sup>2</sup>, Woo Kyun Kim<sup>1</sup>

<sup>1</sup>Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>2</sup>Cargill Animal Nutrition, Minneapolis, Minnesota, United States

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The effects of an unblanched high-oleic peanut diet on layer performance, and the fatty acid profile and quality of the eggs produced

Ondulla T. Toomer\*<sup>1</sup>, Isha Poudel<sup>2</sup>, Thien Vu<sup>1</sup>, Ramon Malheiros<sup>2</sup>, Rebecca Wysocky<sup>2</sup>, Kenneth Anderson<sup>2</sup>

<sup>1</sup>Food Science and Market Quality & Handling Research Unit, Agricultural Research Service/ USDA, Raleigh, North Carolina, United States, <sup>2</sup>Prestage Dept. of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States

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Enhancing Heat Stress Tolerance in Laying Hens through dietary supplementation with Vitamin C, Choline, and Betaine  
 Waqas Ahmed\*<sup>1</sup>, Sara Mubeen<sup>1</sup>, Usma Sher<sup>1</sup>, Iram Sadiq<sup>1</sup>, Muhammad Shoaib<sup>1</sup>, Zeshan Zulfiqar<sup>2</sup>

<sup>1</sup>*Institute of Animal and Dairy Sciences, University of Agriculture Faisalabad, Punjab, Pakistan*, <sup>2</sup>*Department of Animal Nutrition and Feed Science, Henan Agricultural University, Zhengzhou, China*

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Effects of *Bacillus* based probiotics on improving feed conversion and lowering mortality of broilers during a Coccidiosis challenge  
 Sharon H. Miller\*, Kristy Dorton, John Schleifer, Shameer Rasheed, Mark LaVorgna, Mahmoud Masadeh, Gary Reznik  
*Devenish Nutrition, Fairmont, Minnesota, United States*

**P369**

Silymarin Improves Performance, Liver Health, and Diet Productive Energy Value in Commercial Broilers: A Mechanistic Model

Diego A. Martinez<sup>1</sup>, Carol Ponce-de-Leon<sup>2</sup>, Patricia Acuna\*<sup>3</sup>

<sup>1</sup>*University of Arkansas, Fayetteville, Arkansas, United States*, <sup>2</sup>*Independent Researcher, Fayetteville, Arkansas, United States*, <sup>3</sup>*CKM SAC, Lima, Peru*

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Effects of dietary inclusion of bentonite clay in reducing aflatoxin B1 toxicity on production performance, immune response, and intestinal health of broilers

Waqas Ahmed\*, Sara Mubeen, Usma Sher, Iram Sadiq, Sajid Mehmood, Muhammad Shoaib

*Institute of Animal and Dairy Sciences, University of Agriculture Faisalabad Punjab Pakistan, Rawalpindi, Pakistan*

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A blend of probiotic and xylanase can ameliorate the impact of coccidiosis on broilers

Basheer Nusairat\*<sup>1</sup>, Rahaf Asaad<sup>1</sup>, Mohammad Gharaibeh<sup>3</sup>, Jeng-Jie Wang<sup>2</sup>

<sup>1</sup>*Department of Animal Production, Jordan University of Science and Technology, Irbid, Jordan*, <sup>2</sup>*Novus International, Inc., Chesterfield, Missouri, United States*, <sup>3</sup>*Basic Veterinary Medical Science, Jordan University of Science and Technology, Irbid, Jordan*

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Evaluation of the impact of feed additives on pathogens associated with necrotic enteritis in broilers raised on used litter seeded with cocci

Firmin Delago\*<sup>1</sup>, Elizabeth Galbraith<sup>1</sup>, Mike E. Persia<sup>2</sup>, Adrienne Woodward<sup>3</sup>, Michael King<sup>1</sup>, Sona Son<sup>1</sup>, BRIAN DIRKS<sup>3</sup>

<sup>1</sup>*Microbial Discovery Group, Oak Creek, Wisconsin, United States*, <sup>2</sup>*Virginia Tech, Blacksburg, Virginia, United States*, <sup>3</sup>*United Animal Health, Audubon, Pennsylvania, United States*

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Polyphenols decrease oxidative stress and occurrence of breast myopathy  
 Vivian A. Castilho Heiss\*<sup>1</sup>, Letícia C. Garcia<sup>1</sup>, Maria Fernanda d. Burbarelli<sup>1</sup>, Elizabeth Santin<sup>2</sup>, João B. Lancini<sup>3</sup>, Rodrigo G. Garcia<sup>1</sup>, Claudia M. Komiyama<sup>1</sup>

<sup>1</sup>*Universidade Federal da Grande Dourados, Dourados, Ms, Brazil*, <sup>2</sup>*Kupono Assessoria e Consultoria, Curitiba, Brazil*, <sup>3</sup>*Silvafeed, Porto Alegre, Brazil*

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The effects of feeding supplemental tryptophan or probiotic on stress, blood serotonin and brain neurotransmitter response in broilers and Pekin ducks

Emily Jiral<sup>1</sup>, Melanie Bergman<sup>2</sup>, Gregory S. Fraley<sup>2</sup>, Gregory Archer\*<sup>1</sup>

<sup>1</sup>*Texas A&M University, College station, Texas, United States*, <sup>2</sup>*Purdue University, West Lafayette, Indiana, United States*

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Efficacy of a three-strain *Bacillus* DFM in a group-housed performance study in laying hens

Sasha van der Klein\*<sup>1</sup>, Elizabeth Kim<sup>1</sup>, Pam Utterback<sup>2</sup>, Jennifer Blair<sup>2</sup>,

Minoy Cristobal<sup>2</sup>, Bekah Drysdale<sup>2</sup>, Kirsty Gibbs<sup>1</sup>, Carl M. Parsons<sup>2</sup>, Janet



Remus<sup>1</sup>

<sup>1</sup>Danisco Animal Nutrition & Health, Oegstgeest, Netherlands, <sup>2</sup>Department of Animal Sciences, University of Illinois, Urbana, Illinois, United States

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Protected calcium butyrate improves broiler performance under commercial conditions versus tributyrin for the equivalent supplementation of butyric acid

David Harrington\*<sup>1</sup>, Yann Lever<sup>2</sup>, Nemanja Todorovic<sup>1</sup>, Jean Francois Le Roux<sup>2</sup><sup>1</sup>nuance Biotechnology, Lausanne, Switzerland, <sup>2</sup>Global Nutrition International, Fougères, Veuillez sélectionner une région, une état ou une province, France

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Efficacy of a blend of organic acids in water in reducing *Salmonella Heidelberg* contamination in broilers

Karolina V. Z. Augusto<sup>2</sup>, Giseli Heim\*<sup>1</sup>, Antonio J. Piantino Ferreira<sup>3</sup><sup>1</sup>Selko, Amersfoort, Netherlands, <sup>2</sup>R&D, Trouw Nutrition, Campinas, Brazil, <sup>3</sup>Poultry Pathology, University of Sao Paulo, Sao Paulo, Brazil

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

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Effect of different metabolizable energy on Ross 308 broiler growth performance, nutrient digestibility, organ weight, fecal score and lesion score

Kye J. Lee<sup>1,2</sup>, Usman Kolawole<sup>1,2</sup>, In H. Kim\*<sup>1,2</sup>

<sup>1</sup>Animal Biotechnology, Dankook University, Cheonan, Choongnam, Korea (the Republic of), <sup>2</sup>Smart Animal Bio Institute, Cheonan, Choongnam, Korea (the Republic of)

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The detection and co-occurrence of mycotoxins in poultry feed using HPLC-MS/MS analysis

Anthony Pokoo-Aikins\*<sup>1</sup>, Jaci Hawkins<sup>1</sup>, Trevor Mitchell<sup>1</sup>, Lincoln Adams<sup>1</sup>, Revathi Shamugasundaram<sup>1</sup>, Quentin Read<sup>2</sup>, Scott P. Gold<sup>1</sup>, Anthony Glenn<sup>1</sup>

<sup>1</sup>ARS, USDA, Athens, Georgia, United States, <sup>2</sup>ARS, USDA, Southeast Area, Raleigh, North Carolina, United States

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The effect of *Lagenaria Siceraria* (bottle gourd) based seed meal on growth and carcass characteristics of Boschveld chickens.

Sipho Nkosi\*, Margaret Taona Moyo

Agriculture, Lupane State University, Bulawayo, Zimbabwe

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Impact of bulk density in broiler diets on performance, digestive organs, and litter composition

Muhammad Naeem\*<sup>1</sup>, Dianna Bourassa<sup>1</sup>, Samuel J. Rochell<sup>1</sup>, Shijinaraj Manjankattil Rajan<sup>1</sup>, Emily Burton<sup>2</sup>, Ashraf Alkhtib<sup>2</sup>

<sup>1</sup>Auburn University, Auburn, Alabama, United States, <sup>2</sup>Nottingham Trent University, Nottingham, United Kingdom

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Apparent ileal amino acid digestibility and relative mRNA expression of tight junction proteins and cytokines in broiler chickens fed diets with inclusion of raw potato starch or high-amylose corn starch in a mixed *Eimeria*-challenge model

Iyabo W. Oluseyifunmi\*, Oluyinka Olukosi

Poultry Science, University of Georgia, Athens, Georgia, United States

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Determination of the effects of quantitative feed restriction along with oats fodder on meat quality parameters of native geese in Bangladesh

Umme S. Ety\*<sup>2</sup>, Md. Sazedul Karim Sarker<sup>2</sup>, Farhana Sharmin<sup>1</sup>, Nushrat Nourin<sup>2</sup>, Aminul Islam<sup>2</sup>, Sadman S. Zihan<sup>2</sup>

<sup>1</sup>Bangladesh Jute Research Institute, Savar, Dhaka,

Bangladesh, <sup>2</sup>Bangladesh Livestock Research Institute, Savar, Dhaka, Bangladesh

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Evaluation of the amount of pre-starter feed on broiler growth uniformity and gastrointestinal tract development

Mirian Leticia Ramos Provin, Max W. Calasans, Silvana de Castro Caldas\*, Liris Kindlein  
*UFRGS, Encantado, RS, Brazil*

**P385**

Trends in mycotoxin contamination in 2024 United States corn

Chasity Pender\*, Paige N. Gott, Lan Zheng, Shelby Corray  
*Animal Nutrition & Health, dsm-firmenich, Plainsboro, New Jersey, United States*

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Impact of increased particle size of wheat on broiler performance, gastrointestinal development, nutrient utilization, and welfare

Muhammad Naeem\*<sup>1</sup>, Dianna Bourassa<sup>1</sup>, Samuel J. Rochell<sup>1</sup>, Shijinaraj Manjankattil Rajan<sup>1</sup>, Emily Burton<sup>2</sup>, Ashraf Alkhtib<sup>2</sup>

<sup>1</sup>*Auburn University, Auburn, Alabama, United States*, <sup>2</sup>*Nottingham Trent University, Nottingham, United Kingdom*

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Dietary Productive Energy Recommendations for Broilers up to 56 Days of Age

Diego A. Martinez\*, Nawin Suesuttajit, Cole Umberson, Craig Coon  
*University of Arkansas, Fayetteville, Arkansas, United States*

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The Productive Energy Value of Corn as Determined by its Content of Digestible Nutrients and Broiler Age

Diego A. Martinez\*, Nawin Suesuttajit, Cole Umberson, Craig Coon  
*University of Arkansas, Fayetteville, Arkansas, United States*

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Distinct Responses of Two Broiler Genetic Lines to Different Feed Restriction Programs at High Altitude up to 39 Days of Age

Rodolfo Riboty\*<sup>1</sup>, Diego A. Martinez<sup>2</sup>, Carlos Vilchez<sup>1</sup>

<sup>1</sup>*Universidad Nacional Agraria La Molina, Pichincha, Ecuador*, <sup>2</sup>*University of Arkansas, Fayetteville, Arkansas, United States*

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Compensatory Growth, Mortality and Carcass Yield of Broilers from 39 to 46 Days of Age at High Altitude

Rodolfo Riboty\*<sup>1</sup>, Diego A. Martinez<sup>2</sup>, Carlos Vilchez<sup>1</sup>

<sup>1</sup>*Universidad Nacional Agraria La Molina, Lima, Peru*, <sup>2</sup>*University of Arkansas, Fayetteville, Arkansas, United States*

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Evaluation of trypsin inhibitor activity in 2021-2024 United States soybean meal

Mike Schulz, Emily Jackson, Frances Yan\*  
*Novus International Inc., Chesterfield, Missouri, United States*

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Evaluation of microencapsulated vitamin and trace minerals on growth performance, blood biochemistry, and welfare indicators in broilers

Dimitri Malheiros\*<sup>1</sup>, Ludovic Lahaye<sup>1</sup>, Miguel Barrios<sup>1</sup>, Peter Feket<sup>3</sup>, Dan Moore<sup>2</sup>, Monique Archibeque<sup>2</sup>, Jean Fontaine<sup>1</sup>, Derek Detzler<sup>1</sup>

<sup>1</sup>*Jefo, Saint-Hyacinthe, Quebec, Canada*, <sup>2</sup>*Colorado Quality Research, Wellington, Colorado, United States*, <sup>3</sup>*North Carolina State University, Raleigh, North Carolina, United States*

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Niacin and nicotinamide riboside supplementation effects on growth performance in turkey hens

Victoria Wilson\*<sup>1</sup>, John Gonzalez<sup>2</sup>, Scott Beyer<sup>3</sup>, Chad Paulk<sup>1</sup>, Haley Otott<sup>1</sup>, Carter D. Minson<sup>1</sup>, Mason Engnell<sup>1</sup>, Diego Lopez<sup>1</sup>, Allison Blomme<sup>1</sup>, Walter Friesen<sup>1</sup>

<sup>1</sup>Grain Science and Industry, Kansas State University, Manhattan, Kansas, United States, <sup>2</sup>Animal and Dairy Science, University of Georgia, Athens, Georgia, United States, <sup>3</sup>Animal Science and Industries, Kansas State University, Manhattan, Kansas, United States

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Performance and eggshell quality of broiler breeders supplemented with enhanced levels of minerals and vitamins

Eveline Berwanger<sup>1</sup>, Fabrizio Oristanio\*<sup>2</sup>, Neyre N. Shiroma<sup>1</sup>, Jumara Coelho<sup>3</sup>, Dausia Souza<sup>3</sup>, Rosana Vaz<sup>3</sup>, Edson Formigheri<sup>3</sup>, Felipe Cerri<sup>3</sup>, Hamilton Caixeta<sup>3</sup>, Soner Moreira<sup>3</sup>, Wesley Santos<sup>3</sup>

<sup>1</sup>Technical, Salus Com. de Prod. de Saúde e Nutrição Animal S.A., Santo Antônio de Posse, São Paulo, Brazil, <sup>2</sup>Feed Additives, Salus Com. de Prod. de Saúde e Nutrição Animal S.A., Santo Antônio de Posse, São Paulo, Brazil, <sup>3</sup>Technical, Grupo Alvorada, Itapetininga, São Paulo, Brazil

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Calcium Pidolate (Calpid®) Enhances Carcass Traits, Bone Quality, and Mineral Digestibility in Broilers Fed Reduced Calcium and Phosphorus Diets

AbdelRahman Y. Abdelhady\*<sup>1,2</sup>, Abdelhacib Kihal<sup>1</sup>, Salah A. El-Safty<sup>2</sup>, Ahmed Radwan<sup>1</sup>, Sergio Merinero<sup>3</sup>, M. Puyalto<sup>1</sup>, J J. Mallo<sup>1</sup>

<sup>1</sup>Norel S.A., Madrid, Spain, <sup>2</sup>Poultry Production Department, Faculty of Agriculture, Ain Shams University, Cairo, Egypt, <sup>3</sup>Nuvet Agriservices S.L.U., Madrid, Spain

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Differential responses of gut barrier function to heat stress in divergently selected broiler lines for water efficiency: insights from gene and protein expression profiles

Maria Fernandez Cuadrado\*<sup>1</sup>, Brooklee Roach<sup>2</sup>, Elizabeth S. Greene<sup>1</sup>, Sara Orlowski<sup>1</sup>, Sami Dridi<sup>1</sup>

<sup>1</sup>Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States, <sup>2</sup>Har-Ber High School, Springdale, Arkansas, United States

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Differential expression of genes in fatty acid metabolism and inflammation pathways in *Pectoralis major* of broilers with woody breast myopathy

Linan Jia\*<sup>1</sup>, Chuan-Yu Hsu<sup>2</sup>, Xue Zhang<sup>3</sup>, M. W. Schilling<sup>4</sup>, Kelley Wamsley<sup>1</sup>, Pratima Adhikari<sup>1</sup>, Li Zhang<sup>1</sup>

<sup>1</sup>Poultry Science, Mississippi State University, Mississippi State, Mississippi, United States, <sup>2</sup>Institute for Genomic, Biocomputing, and Biotechnology, Mississippi State University, Mississippi State, Mississippi, United States, <sup>3</sup>Department of Animal and Dairy Sciences, Mississippi State University, Mississippi State, Mississippi, United States, <sup>4</sup>Department of Food Science, Nutrition and Health Promotion, Mississippi State University, Mississippi State, Mississippi, United States

**P398**

Effect of different percentages of fertile eggs in setter trays on eggshell temperature and hatching parameters

Ricardo J. Pereira\*<sup>1</sup>, Felipe L. Kroetz Neto<sup>2</sup>

<sup>1</sup>Animal Reproduction, College of Veterinary Medicine and Animal Sciences - São Paulo University, Pirassununga, São Paulo, Brazil, <sup>2</sup>Aviagen America Latina Ltda, Campinas, São Paulo, Brazil

**P399**

Negative Impact of *Eimeria spp.* on the reproductive tract of Laying Hens with minimal influence of Mycotoxins from contaminated corn DDGS  
Hamid Reza Rafieian-Naeini\*<sup>1</sup>, Deependra Paneru<sup>1</sup>, Hemanth Reddy Katha<sup>1</sup>, Silvia Carnaccini<sup>2</sup>, Woo Kyun Kim<sup>1</sup>

<sup>1</sup>Department of Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>2</sup>Population Health, University of Georgia, Athens, Georgia, United States

**P400**

The influence of egg weight on eggshell temperature during incubation and on hatching parameters

Ricardo J. Pereira\*<sup>1</sup>, Felipe L. Kroetz Neto<sup>2</sup>

<sup>1</sup>Animal Reproduction, College of Veterinary Medicine and Animal Sciences - São Paulo University, Pirassununga, São Paulo, Brazil, <sup>2</sup>Aviagen America Latina Ltda, Campinas, São Paulo, Brazil

**P401**

Evaluation of skip-a-day feeding in Cobb 500 broiler breeder hens  
Alyssa M. Lyons\*<sup>1</sup>, Cristiane S. Araujo<sup>2</sup>, Mário Henrique S. Lopes<sup>3</sup>, Giovana M. Longhini<sup>3</sup>, Raimundo G. Netto<sup>3</sup>, Melany Y. Lovon<sup>3</sup>, Lucio F. Araujo<sup>3</sup>, Mike E. Persia<sup>1</sup>

<sup>1</sup>School of Animal Sciences, Virginia Tech, Blacksburg, Virginia, United States, <sup>2</sup>FMVZ-USP, University of Sao Paulo, Pirassunuga, Brazil, <sup>3</sup>Department of Animal Science, University of São Paulo, Pirassununga, São Paulo, Brazil

**P402**

Factors affecting Leghorn breeder pullet hatchability from 2016 to 2023

Caleb M. Marshall\*<sup>1</sup>, Daniel Valbuena<sup>2</sup>, Edgar O. Oviedo-Rondón<sup>1</sup>

<sup>1</sup>Prestage Department of Poultry Science, North Carolina State University, Raleigh, North Carolina, United States, <sup>2</sup>Hy-Line International, Des Moines, Iowa, United States

**P403**

Detection of Early Dead Embryos using Hyperspectral Imaging System

Alin Khaliduzzaman\*<sup>1</sup>, Jason Lee Emmert<sup>2</sup>, Mohammed Kamruzzaman<sup>1</sup>

<sup>1</sup>Department of Agricultural and Biological Engineering, University of Illinois, Urbana, Illinois, United States, <sup>2</sup>Department of Animal Sciences, University of Illinois, Urbana, Illinois, United States

**P404**

Effect of dietary tryptophan and photoperiod on the fear responses of broilers during the open field test

Rosemary Whittle\*, Chantel Pennicott, Angela Perretti, Victor Oyeniran, Jaelen Cherry, Shawna Weimer

Poultry Science, University of Arkansas, Farmington, Arkansas, United States

**P405**

Predicting footpad condition and leg health in broiler chickens using Recurrent All Pairs Field Transforms for optical flow and advanced segmentation models

Mahtab Saeidifar\*<sup>1,2</sup>, Guoming Li<sup>1,2,3</sup>, Chongxiao Chen<sup>1,3</sup>, Tongshuai Liu<sup>1,4</sup>, Ehsan Asali<sup>5,1</sup>, Venkat U. Bodempudi<sup>1,2</sup>

<sup>1</sup>Department of Poultry Science, University of Georgia, Athens, Georgia, United States, <sup>2</sup>Institute for Artificial Intelligence, University of Georgia, Athens, Georgia, United States, <sup>3</sup>Institute for Integrative Precision Agriculture, University of Georgia, Athens, Georgia, United States, <sup>4</sup>College of Animal Science & Technology, Henan University of Animal Husbandry and Economy, Zhengzhou, Henan, China, <sup>5</sup>Computer Science, University of Georgia, Athens, Georgia, United States

## Pathology

### P406

Pathological and serological investigation of Newcastle Disease in poultry in certain areas of Jhenaidah District of Bangladesh

Md Mustafijur Rahaman\*<sup>2, 1</sup>

<sup>1</sup>*Atlantis University, Miami, Florida, United States*, <sup>2</sup>*Pathology, Patuakhali Science and Technology University (PSTU), Patuakhali, Barisal, Bangladesh*

### P407

*In vitro* antimicrobial activity of essential oil solution (Sentinel Sol) against *Enterococcus* strains isolated from broilers

Claire Carlu\*<sup>1</sup>, Claire Girard<sup>1</sup>, Karine Fayolle<sup>2</sup>, Reda Zeghadi<sup>1</sup>, Sylvain Kerros<sup>1</sup>

<sup>1</sup>*Phytosynthese, Mozac, France*, <sup>2</sup>*VetAgro Sup, Lempdes, France*

### P408

Determining the Optimal Strain and Pass for Histomonas Feed Additive Trial

Christina S. Sigmon\*, Justin Lowery, Lin L. Walker

*Poultry Science, North Carolina State University, Raleigh, North Carolina, United States*

### P409

Optimizing Poultry Health Management with AI: An Approach to Holistically Analyze Bird Health and Performance

Igor Soares\*, Bruna L. Belote, Otto Figueiró, Fernanda F. Rodrigues, Elizabeth Santin

*ISI Institute, Curitiba, Parana, Brazil*

## SCAD

### P410

Antibody Response to Different 2-Way and 4-Way IBD, Reo, NDV, and IBV Killed Vaccines

Brian Jordan\*, Dale Gambrill

*Zoetis, Madison, Georgia, United States*

### P411

A Field Study of *Clostridium perfringens* Enumeration Methods in the Broiler House Environment

Andrea Zedek\*<sup>1</sup>, David Smith<sup>1</sup>, Charles Hofacre<sup>2</sup>, Virginia Baxter<sup>2</sup>, Matthew K. Jones<sup>2</sup>, Roy Berghaus<sup>3</sup>

<sup>1</sup>*Huvepharma, Inc., Peachtree City, Georgia, United States*, <sup>2</sup>*Southern Poultry Research Group, Inc, Watkinsville, Georgia, United States*, <sup>3</sup>*University of Georgia, Athens, Georgia, United States*

### P412

Immune cellular and transcriptional changes in the mucosal tissues of broiler chickens during experimental *Clostridium perfringens*-induced necrotic enteritis

Pok Man Chan\*, Carissa Gaghan, Abigail Armwood, Raveendra Kulkarni

*Department of Population Health and Pathobiology, College of Veterinary Medicine, North Carolina State University, Raleigh, North Carolina, United States*

### P413

A multi-phase *Salmonella* vaccination program alters IgA levels in the ceca, bile, and peripheral blood of specific pathogen-free White Leghorns

Chrysta N. Beck\*, Jossie M. Santamaria, Ruvindu Perera, Gisela F. Erf

*Poultry Science, University of Arkansas, Fayetteville, Arkansas, United States*

**P414**

Growth characterization and genetic validation of a genetically manipulated *pagP*-deficient avian pathogenic *Escherichia coli* strain  
Linan Jia\*<sup>1</sup>, Hailey Fugate<sup>1</sup>, Chuan-Yu Hsu<sup>2</sup>, Jeffrey Evans<sup>3</sup>, Kelsy Robinson<sup>3</sup>, Pratima Adhikari<sup>1</sup>, Li Zhang<sup>1</sup>

<sup>1</sup>*Poultry Science, Mississippi State University, Starkville, Mississippi, United States*, <sup>2</sup>*Institute for Genomic, Biocomputing, and Biotechnology, Mississippi State University, Mississippi State, Mississippi, United States*, <sup>3</sup>*Poultry Research Unit, USDA-ARS, Mississippi State, Mississippi, United States*

**P415**

Development of a Taqman Multiplex Real-time qPCR Assay for Pro-inflammatory Gene Detection in Samples Infected with Avian Pathogenic *Escherichia coli* (APEC)

Xin Ye<sup>1</sup>, Chuan-Yu Hsu<sup>3</sup>, Linan Jia\*<sup>1</sup>, Christopher Magee<sup>2</sup>, Stephanie Whitham<sup>2</sup>, Spencer Leigh<sup>2</sup>, Jeffrey Evans<sup>2</sup>, Li Zhang<sup>1</sup>, Kelsy Robinson<sup>2</sup>  
<sup>1</sup>*Department of Poultry Science, Mississippi State University, Mississippi State, Mississippi, United States*, <sup>2</sup>*Poultry Research Unit, ARS, United States Department of Agriculture, Mississippi State, Mississippi, United States*, <sup>3</sup>*Institute for Genomic, Biocomputing, and Biotechnology, Mississippi State University, Mississippi State, Mississippi, United States*

**P416**

Phylogenetic analysis of over 1,000 IBDV sequences of VP2 from commercial chicken flocks since 2009 and a comparison of key mutations shared with reference strains

Po-Hsin Yu, Kalen Cookson\*, Jon Schaeffer  
*Zoetis, Lawrenceville, Georgia, United States*

**P417**

Generation of a Live Recombinant Thermostable Highly Attenuated Vaccine rK148/GVII-F and Protective Efficacy Evaluation using a Single Regimen Against Lethal NDV GVII.1.1.

Amal A. Mouhamed\*  
*Population Health, University of Georgia, Athens, Georgia, United States*  
*Minor Outlying Islands*

**P418**

Impact of a Novel Granular Peracetic Acid Litter Treatment on Food Safety and Avian Pathogenic Bacteria *in situ*: Pilot Broiler Trials Suggest Utility as an Antibiotic-Free Litter Amendment

K. S. McKenzie\*<sup>1</sup>, Charles Hofacre<sup>2</sup>  
<sup>1</sup>*EnviroTech, College Station, Texas, United States*, <sup>2</sup>*Southern Poultry Research Group, Inc., Watkinsville, Georgia, United States*

Poster Reception  
Monday, January 27  
4:00 – 6:00 p.m.

Milton L. Dendy Keynote Address  
B405  
Tuesday, January 28  
11:00 a.m.  
Dr. Joseph Giambrone, Auburn  
Chair: Dr. Silvia Carnaccini, Iowa State

SCAD Business Meeting  
B405  
Tuesday, January 28  
Noon  
Chair: Dr. Silvia Carnaccini, Iowa State

SPSS Business Meeting  
B407  
Tuesday, January 28  
Noon  
Chair: Dr. Roshan Adhikari, CJ America

## 2024 SPSS Student Awards:

### Metabolism & Nutrition

Emily Estanich, WVU (J. Moritz)  
Laney Froebel, Illinois (R. Dilger)  
Joseph Gulizia, Auburn (W. Pacheco)  
Lucas Knarr, WVU (J. Moritz)  
Dmitri Malheiros, NCSU (K. Anderson)  
Environment Management  
Luis Munoz, Auburn (D. Bourassa)  
Melanie Bergman, Purdue (G. Fraley)  
Teaching, Pedagogy, Extension  
Peyton Taylor, MSSTATE (J. Wells)

### Graduate Travel Awards

Clara Ziezold, Guelph  
Grayson Walker, NCSU

### Alltech Manuscript Award

Guanchen Liu, UGA (WK Kim)

### Don R. Sloan Undergraduate Research Award Recipient

Oral: Delaney Groves, VT (M. Persia)  
Poster: Reyna Mero, CSUFresno (K. Tarrant)

### Processing and Products (Teaching)

Montana Riggs, Auburn (D. Bourassa)

### Physiology

Clara Ziezold, Guelph (G. Bedecarrats)

### Pathology

Grayson Walker, NCSU (Borst)

### Posters

Fozol Ovi - MSSTATE (P. Adhikari)  
Amber Richards - UGA (N. Shariat)  
Milan Sharma - UGA (W. K. Kim)  
Tanmaie Kalapala - UARK (P. Jesudhasan)

### Undergraduate Research Competition Participants

Matthew Hughes, Auburn  
Fang Peng, Hanau Ag. U.  
Delaney Groves, VT  
Thiago Yabuta, NCSU  
Jacob Dees, Auburn  
Parker Watson, TAMU  
Shaunie Cruz, Clemson  
Jordan Smith, S.ARK  
Grace Rutherford, S.ARK  
Reyna Mero, CSUFresno  
Urias Castillo, Auburn  
Neketa Hughes, UGyvana  
Ari Bragg, Clemson  
Anna Kathryn Riggs, MSSTATE

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Emily Cason, UGA- Poster Presentation Award

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