

# Thank You to Our 2026 PSA Annual Meeting Sponsors

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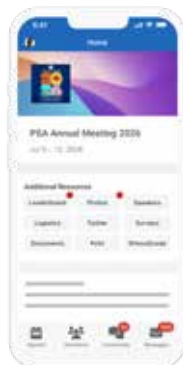
# 2026 ANNUAL MEETING PROGRAM

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## Schedules change. Stay current with Whova.



This printed program was finalized before the conference. Sessions, room assignments, and speakers may shift. For the most up-to-date information, use the Whova app. When in doubt, the app is current.





# PRESIDENT'S WELCOME



**Doug Korver**

PSA President  
2025-2026

On behalf of the Board of Directors, the 2026 Annual Meeting Program Committee, and PSA staff, I welcome each of you to Toronto for the 2026 Annual Meeting of the Poultry Science Association!

The PSA Annual Meeting and Scientific Conference is a key part of our vision to be the world's most respected source for the poultry sciences. Dr. Elijah Kiarie and the Annual Meeting Program Committee organized an exciting program for this year's meeting. While the schedule is somewhat different than previous years, you can expect the same high-quality science and opportunities for networking.

This year's program includes nearly 500 accepted abstracts: 340 talks and 152 posters, plus 53 presentations from world leaders in the poultry industry and research community across 13 symposia. During the scheduled breaks, we encourage you to explore the e-posters and visit our exhibitors.

The program committee and staff have also arranged several exciting social events. Catch up with old friends and make new connections at the Welcome Reception, Friday, July 10 at 5:30 pm in the Exhibit Hall. The Student Hatchery Luncheon is Saturday and will feature entertainment you won't want to miss. On Saturday evening, join us for the PSA BBQ at the Hockey Hall of Fame, one of Toronto's most iconic attractions. To thank our manuscript reviewers and committee chairs, we will also host an invitation-only Reviewer Reception and a Committee Chairs luncheon. These volunteers are crucial to PSA's success.

Thank you to the PSA staff for coordinating the logistics of this year's meeting: Dr. Don McIntyre (Interim Executive Director), Sydney Carr (Director of Operations), Cara Tharp (Director of International Conferences & Events), Rebecca Smith (Senior Manager of Meetings & Events), Jenny Paul (Conference Programs Coordinator), Derek Wade (Membership Services Manager), David Busboom (Managing Editor), and Quint Campbell (Communications Lead, Roadrunner Marketing). I'd also like to thank PSA leadership, the Annual Meeting Program Committee, our many volunteers, and our sponsors and exhibitors. Please thank the representatives from sponsoring companies who help make this event possible.

This year, the World's Poultry Congress will also be held in Toronto immediately following the PSA Annual Meeting. I hope you can stay for that event as well! The WPSA Lecture will mark its start.

Welcome to Toronto! I hope you have a productive and fun time this week!





## 2026 ANNUAL PROGRAM COMMITTEE

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*Thank you to the Program Chair and the program committee for their efforts on our behalf. Please take a minute to express your appreciation when you see them this week.*

### PROGRAM CHAIRS

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**Elijah Kiarie**, General Program Chair

**Deana R. Jones**, General Program Chair-Elect, Student Competition

**Samuel J. Rochell**, General Program Chair-Elect, Student Travel Awards

**Roshan Adhikari**, General Program Chair-Elect

### SESSION CHAIRS

---

Animal Well-Being and Behavior: **Alexander Harlander**

Extension and Instruction: **Dervan D. Bryan**

Genetics and Molecular Biology: **Sara Orlowski-Workman**

Immunology, Health and Disease (Feed Additives): **Wood Kyun Kim**

Immunology, Health and Disease (Health and Disease): **Samson Oladokun**

Immunology, Health and Disease (Immunology): **Alexander B. Yitbarek**

Management and Production: **Samuel Mwangi**

Metabolism and Nutrition (Amino Acids): **Roshan Adhikari**

Metabolism and Nutrition (Enzymes): **Oluyinka A. Olukosi**

Metabolism and Nutrition (Feed Additives): **Deborah I. Adewole**

Metabolism and Nutrition (General Nutrition): **Anna Rogiewicz**

Metabolism and Nutrition (Vitamins and Minerals): **Reza A. M. Kakhki**

Microbiology and Food Safety: **Moussa S. Diarra**

Physiology and Reproduction: **Giridhar Athrey**

Processing and Products: **Tomi Obe**

Informal Nutrition Symposium: **Douglas R. Korver**

National Extension Workshop: **Darrin Karcher, PSA Extension Committee**

Presidential Symposium: **Douglas R. Korver, PSA President**

WPSA Lecture: **Bruce M. Rathgeber & Edgar O. Oviedo-Rondon, WPSA Branch Presidents**

### EX OFFICIO

---

**Jenny Paul**, Conference Program Manager

**Don McIntyre**, Interim Executive Director

**Douglas R. Korver**, PSA President, Board Liaison



# MEETING DETAILS & IMPORTANT REMINDERS

## Hours

	Registration	Upload & Preview	Exhibits & Posters
<b>Thursday</b> July 9	3:00–7:00 PM	2:00–6:00 PM	–
<b>Friday</b> July 10	7:00 AM–5:00 PM	6:30 AM–5:00 PM	6:30 AM–7:00 PM
<b>Saturday</b> July 11	7:00 AM–5:00 PM	7:00 AM–5:00 PM	7:30 AM–5:00 PM
<b>Sunday</b> July 12	7:30 AM–4:00 PM	6:30 AM–5:00 PM	6:45 AM–5:00 PM
<b>Monday</b> July 13	7:30 AM–12:00 PM	7:00–10:00 AM	7:30–10:30 AM

Registration & Upload/Preview Room: Const. Hall 105 Foyer (next to Registration). Exhibits & Posters: Const. Hall 106 & 107. Hours subject to change.

## Important Reminders

### Meeting Badge

Wear your meeting badge. It is your admission to all scientific sessions, special events, and meal functions.

### Presentation Upload Deadlines

Oral presenters must upload their files in the Upload & Preview Room one day prior to the scheduled presentation time. Final upload deadline to be confirmed.

### Rooms & Times

Rooms and times are subject to change. Check room signs and on-site updates for the latest information.

Join us on our official event app!

- ➔ Personalize your agenda
- ➔ Receive event updates and notifications
- ➔ Connect with other attendees
- ➔ Create and join meet-ups





## SCHEDULE AT A GLANCE

Rooms and times are subject to change. All events take place at the Metro Toronto Convention Centre unless noted. Concurrent oral and poster sessions appear as "Oral & Poster Presentations"; see the Scientific Program section for full session, room, and abstract detail.

### TUESDAY, JULY 7

2:00 PM - 9:00 PM PSA Finance Committee ..... Annex (Delta Hotel)

### WEDNESDAY, JULY 8

7:00 AM - 6:00 PM PSA Board of Directors Meeting ..... Parkdale B (Delta Hotel)

### THURSDAY, JULY 9

7:00 AM - 6:00 PM PSA Board of Directors Meeting ..... Parkdale B (Delta Hotel)

3:00 PM - 7:00 PM Registration & Upload Room..... Const. Hall 105 Foyer

### FRIDAY, JULY 10

6:30 AM - 5:30 PM Registration & Upload Room..... Const. Hall 105 Foyer

6:30 AM - 7:00 AM Attendee Breakfast..... Const. Hall 106 & 107

7:30 AM - 7:00 PM Exhibits & Poster Hall Open..... Const. Hall 106 & 107

7:00 AM - 8:00 AM Opening Session..... Bassett Theatre

8:00 AM - 12:15 PM Metabolism and Nutrition Symposium: Supply Chain and Ingredient Quality....  
..... Bassett Theatre

8:00 AM - 12:15 PM Oral & Poster Presentations ..... Various Rooms

10:00 AM - 10:45 AM Student Poster Comp. I & AM Break..... Const. Hall 106 & 107

12:15 PM - 1:15 PM Committee Chairs Luncheon ..... Reception Hall 104B

12:15 PM - 1:15 PM Pacific Rim Networking Luncheon..... Reception Hall 104C

12:15 PM - 1:15 PM National Extension Luncheon ..... Reception Hall 104D

1:15 PM - 5:30 PM Informal Nutrition Symposium: Care and Feeding of Modern Breeders  
..... Bassett Theatre

1:15 PM - 4:30 PM Processing and Products Symposium: Poultry in Pet Food..... Const. Hall 105

1:15 PM - 5:30 PM Oral & Poster Presentations ..... Various Rooms

3:15 PM - 4:00 PM Student Poster Comp. II & PM Break..... Const. Hall 106 & 107

5:30 PM - 7:00 PM Welcome & Opening Reception..... Const. Hall 106 & 107

### SATURDAY, JULY 11

6:30 AM - 7:00 AM Attendee Breakfast..... Const. Hall 106 & 107

7:00 AM - 5:00 PM Registration & Upload Room..... Const. Hall 105 Foyer

6:30 AM - 4:00 PM Exhibits & Poster Hall Open..... Const. Hall 106 & 107

8:00 AM - 12:15 PM Immunology, Health and Disease Symposium: Inter-Generational Nutrition and  
Gut Health..... Bassett Theatre

8:00 AM - 12:15 PM Processing and Products Symposium: Poultry Meat: Global Issues  
..... Const. Hall 105

8:00 AM - 12:15 PM Oral & Poster Presentations ..... Various Rooms

10:00 AM - 10:45 AM Poster Session I & AM Break ..... Const. Hall 106 & 107



# SCHEDULE AT A GLANCE (CONT.)

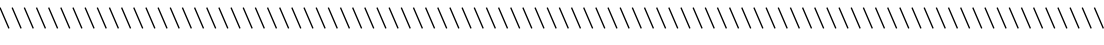
12:15 PM - 1:15 PM	Student Hatchery Luncheon .....	Reception Hall 104 (B-D)
1:15 PM - 5:30 PM	Metabolism and Nutrition Symposium: Extended Laying Cycle Strategies .....	Bassett Theatre
1:15 PM - 5:30 PM	Microbiology and Food Safety Symposium: Foodborne Pathogen Contamination.....	Const. Hall 105
1:15 PM - 5:30 PM	Oral & Poster Presentations .....	Various Rooms
3:15 PM - 4:00 PM	Poster Session II & PM Break .....	Const. Hall 106 & 107
6:00 PM - 10:00 PM	PSA BBQ .....	Hockey Hall of Fame

## SUNDAY, JULY 12

6:45 AM - 7:15 AM	Business Meeting Breakfast.....	Const. Hall 105
6:30 AM - 4:00 PM	Registration & Upload Room.....	Const. Hall 105 Foyer
6:45 AM - 5:00 PM	Exhibits & Poster Hall Open.....	Const. Hall 106 & 107
7:00 AM - 8:30 AM	PSA Business Meeting.....	Bassett Theatre
8:30 AM - 9:00 AM	Poster Session III & AM Break .....	Const. Hall 106 & 107
9:00 AM - 10:00 AM	Student Travel Award Meeting.....	Reception Hall 104C
9:00 AM - 12:00 PM	Extension and Education Symposium: Generative AI and LLMs in Poultry .....	Bassett Theatre
9:00 AM - 12:00 PM	Management and Production Symposium: Poultry Litter and the Environment .....	Const. Hall 105
9:00 AM - 12:00 PM	Oral & Poster Presentations .....	Various Rooms
12:00 PM - 1:00 PM	Past Presidents Luncheon.....	Reception Hall 104C
12:00 PM - 1:00 PM	Latin American Networking Luncheon.....	Reception Hall 104D
1:00 PM - 5:00 PM	Metabolism and Nutrition Symposium: Affordable Precision Nutrition .....	Const. Hall 105
1:00 PM - 5:30 PM	Symposium: Methodology Matters .....	Bassett Theatre
1:00 PM - 5:00 PM	Oral & Poster Presentations .....	Various Rooms
3:00 PM - 3:30 PM	Ice Cream Social .....	Const. Hall 106 & 107
5:30 PM - 7:30 PM	Awards Celebration.....	Bassett Theatre
7:30 PM - 9:00 PM	Awards Reception.....	Reception Hall 104 (A-D)

## MONDAY, JULY 13

7:00 AM - 8:00 AM	Fellows Reunion Breakfast .....	Reception Hall 104C
7:00 AM - 8:00 AM	PSA Board Breakfast .....	Reception Hall 104D
7:30 AM - 8:00 AM	Attendee Breakfast.....	Const. Hall 106 & 107
7:30 AM - 11:30 AM	Registration & Upload Room.....	Const. Hall 105 Foyer
7:30 AM - 10:30 AM	Exhibits & Poster Hall Open.....	Const. Hall 106 & 107
8:00 AM - 12:00 PM	Presidential Symposium: Poultry Bone Biology.....	Bassett Theatre
9:00 AM - 12:00 PM	PSA Hatchery Workshop: Communicating Poultry Science.....	Const. Hall 105
8:00 AM - 12:15 PM	Oral & Poster Presentations .....	Various Rooms
10:00 AM - 10:30 AM	Poster Session IV & AM Break .....	Const. Hall 106 & 107
10:30 AM - 12:00 PM	WPSA-CA & WPSA-USA Board Meetings.....	Reception Hall 104B & 104C
12:00 PM - 1:00 PM	WPSA-USA & WPSA-Canada Luncheon.....	Reception Hall 103





# PSA SPECIAL EVENTS

## FRIDAY, JULY 10

### Welcome Reception

5:30–7:00 PM · Constitution Hall 106 & 107

Kick off the meeting with colleagues over hors d'oeuvres and refreshments. Each attendee receives two drink tickets.

## SATURDAY, JULY 11

### Student Hatchery Luncheon\*

12:15–1:15 PM · Reception Hall 104 (B–D)

A networking lunch for students and hatchery program participants.

### PSA BBQ\*

6:00–10:00 PM · Off-site, Hockey Hall of Fame

An evening of food and networking at the Hockey Hall of Fame.

## SUNDAY, JULY 12

### PSA Business Meeting

7:00–8:30 AM · Bassett Theatre

The annual business meeting of the Association, open to all members. Breakfast served from 6:45 AM.

### Ice Cream Social

3:00–3:30 PM · Constitution Hall 106 & 107

Take an afternoon break with an ice cream bar in the exhibit hall.

### PSA Awards Celebration & Reception \*

Celebration 5:30–7:30 PM, John W. H. Bassett Theatre

Reception 7:00–9:00 PM, Reception Hall 104 (A–D)

Celebrate the 2026 award recipients and Fellows, followed by the Awards Reception.

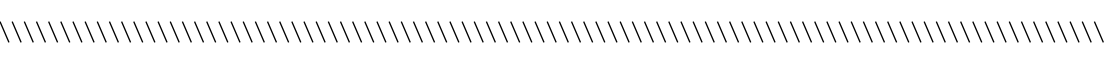
## MONDAY, JULY 13

### PSA Hatchery Business Meeting & Workshop

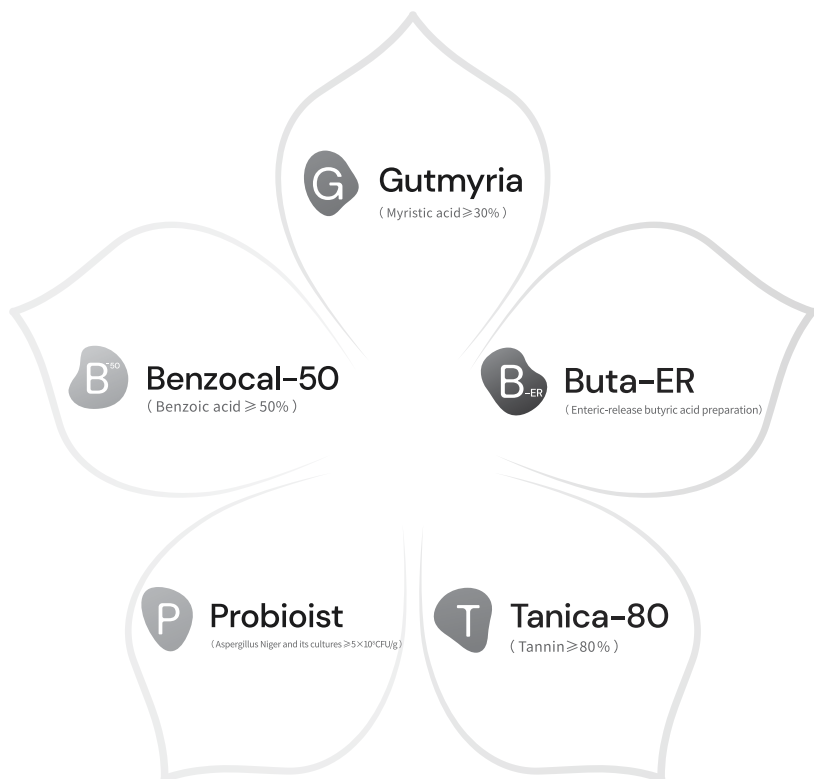
9:00 AM–12:00 PM · 105 Constitution Hall

The annual meeting of PSA student members and professional development session.

\* Ticket or advance registration required.



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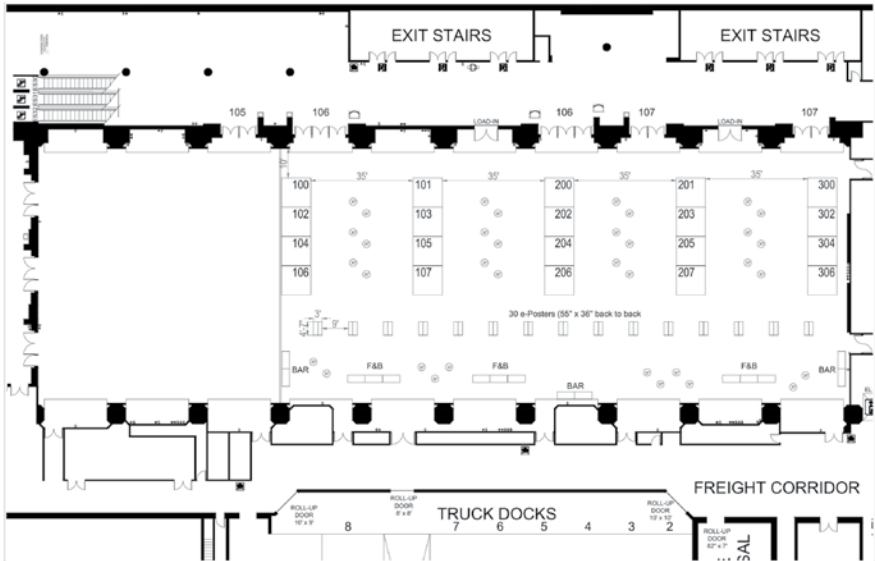


# 2026 ANNUAL MEETING EXHIBITORS

Visit our exhibitors in Constitution Hall 106 & 107.

- Booth 101 & 103**    Alternative Design Manufacturing & Supply, Inc.
- Booth 105**        Insighter Co.
- Booth 107**        AviNews International
- Booth 200**        Evonik Corporation
- Booth 201**        Novus International
- Booth 203**        PSA Journals
- Booth 204**        U.S. Soy
- Booth 205 & 207**    Poultry Science Association
- Booth 206**        Quantipath

## Exhibit Hall – Constitution Hall 106 & 107

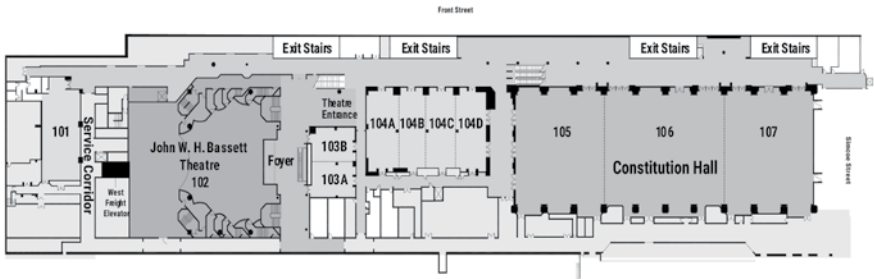




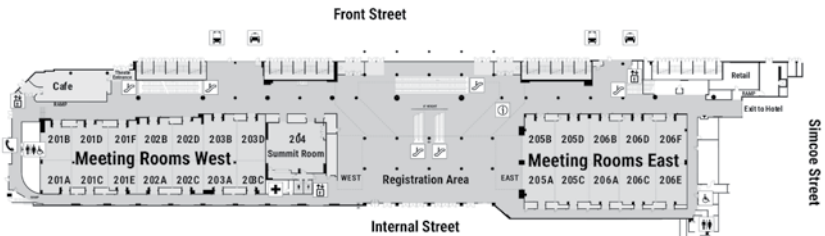
# CONVENTION CENTRE MAPS

Metro Toronto Convention Centre · 255 Front Street West, Toronto, Ontario

## Metro Toronto Convention Centre – Level 100



## Metro Toronto Convention Centre – Level 200





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# Scientific Program

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Friday, July 10 – Monday, July 13, 2026 · Toronto

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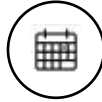
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# Friday, July 10

SCIENTIFIC SESSIONS

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# FRIDAY, JULY 10

## Student Competition: Extension and Instruction

Moderator: Dervan Bryan, Penn State University

206 (E-F)

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- |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:00 AM | 1 | <p><b>Chicken tracks: poultry programs as high-impact vehicle to superior youth development</b><br/> Elizabeth Peluso*<sup>24UG</sup>, Ashley L. Brooks<sup>34</sup>, Mary Fosnaught<sup>14</sup><br/> <sup>1</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>2</sup>Johnson University, Knoxville, Tennessee, United States; <sup>3</sup>Craven County Center, New Bern, North Carolina, United States; <sup>4</sup>North Carolina Cooperative Extension, Raleigh, North Carolina, United States</p> |
| 8:15 AM | 2 | <p><b>Identifying 4-H Poultry Programming Needs in Iowa</b><br/> Cameron F. Hall*<sup>1GS</sup>, Dawn Koltjes<sup>1</sup>, Amy Powell<sup>1</sup> <sup>1</sup>Iowa State University, Ames, Iowa, United States</p>                                                                                                                                                                                                                                                                                                                       |
| 8:30 AM | 3 | <p><b>Identifying barriers and facilitators to the adoption of biosecurity practices by rural women in Punjab, Pakistan</b><br/> Iqra Nazir*<sup>1GS</sup>, Marij Riaz<sup>2</sup>, Zafar Hayat<sup>2</sup>, Paul Ebner<sup>1</sup> <sup>1</sup>Purdue university, West Lafayette, Indiana, United States; <sup>2</sup>University of Sargodha, Sargodha, Punjab, Pakistan</p>                                                                                                                                                            |
| 8:45 AM | 4 | <p><b>Predictive modeling tools utilizing artificial intelligence can aid in digestible lysine requirement estimation for turkeys on a phased feeding program</b><br/> Ann R. Sisson*<sup>1GS</sup>, Enrico Casella<sup>1</sup>, Lorenzo Palazzetti<sup>1</sup>, John W. Boney<sup>1</sup> <sup>1</sup>Penn State University, University Park, Pennsylvania, United States</p>                                                                                                                                                           |


**FRIDAY, JULY 10**
**Student Competition: Immunology, Health and Disease - Health and Disease**
*Moderator: Samson Oladokun, Texas A&M University*

205 (A-D)

- |         |   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:00 AM | 5 | <p><b>Upper respiratory microbiota signatures associated with resilience to H7N1 high pathogenicity avian influenza in broiler chickens</b></p> <p>Alejandro Moreno León<sup>*12GS</sup>, María José Valdez May<sup>12</sup>, Gisela Tomás<sup>12</sup>, Rosa Valle<sup>12</sup>, Marta Pérez<sup>12</sup>, Adrià Girbau<sup>12</sup>, Rubén Del Caz<sup>12</sup>, Miquel Nofrarías<sup>12</sup>, Kateri Bertran<sup>12</sup>, José Luis Lavín<sup>3</sup>, Natàlia Majó<sup>14</sup> <sup>1</sup>Centre de Recerca en Sanitat Animal (CRESA), Bellaterra, Barcelona, Spain; <sup>2</sup>Centre de Recerca en Sanitat Animal (CRESA), Bellaterra, Barcelona, Spain; <sup>3</sup> NEIKER, Basque Institute for Agricultural Research and Development, Basque Research and Technology Alliance (BRTA), Derio, Bizkaia, Spain; <sup>4</sup>Facultat de Veterinària, Universitat Autònoma de Barcelona (UAB), Bellaterra, Barcelona, Spain</p> |
| 8:15 AM | 6 | <p><b>Computational Identification of Natural Inhibitors Targeting Fiber Proteins of FAdV-1 and FAdV-4 Through Integrated Virtual Screening and Molecular Dynamics Simulations</b></p> <p>Amina Kardoudi<sup>*1GS</sup> <sup>1</sup>Institute of agriculture and veterinary medicine Hassan II, Casablanca, Morocco</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 8:30 AM | 7 | <p><b>Impact of cold stress on immune responses, production performances and colibacillosis transmission in cage-free layer chickens</b></p> <p>Iddris M. Habib<sup>*1GS</sup>, Shuja Majeed<sup>1</sup>, Nimra Khalid<sup>1</sup>, Bikas R. Shah<sup>1</sup>, Mohamad O. Jaradat<sup>1</sup>, Lisa R. Bielke<sup>2</sup>, Qihong Wang<sup>13</sup>, Lingying Zhao<sup>4</sup>, Ali Nazmi<sup>15</sup> <sup>1</sup>The Ohio State University, Wooster, Ohio, United States; <sup>2</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>3</sup>The Ohio State University, Columbus, Ohio, United States; <sup>4</sup>The Ohio state university, Wooster, Ohio, United States; <sup>5</sup>The Ohio State University, Columbus, Ohio, United States</p>                                                                                                                                                       |
| 8:45 AM | 8 | <p><b>NetB+ Clostridium perfringens strain has more pathogenicity and toxin production than NetB+/TpeL+ strain in embryonated chicken eggs</b></p> <p>Hamza Javaid<sup>*1GS</sup>, Amritha Ajayan<sup>1</sup>, DHANANJAI MURINGATTU PRABHAKARAN<sup>1</sup>, Peter Bina<sup>1</sup>, Bernie Beckman<sup>2</sup>, Kumar Venkitanarayanan<sup>3</sup>, Anup Kollanoor Johny<sup>1</sup> <sup>1</sup>University of Minnesota, Saint Paul, Minnesota, United States; <sup>2</sup>Hy-Line NA, West Des Moines, Iowa, United States; <sup>3</sup>University of Connecticut, Storrs, Connecticut, United States</p>                                                                                                                                                                                                                                                                                                                               |



## FRIDAY, JULY 10

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- 9:00 AM 9 **Necrotic enteritis challenge alters egg quality, body composition, and bone microarchitecture in laying hens**  
Hemanth Reddy Katha\*<sup>1GS</sup>, Venkata Prathap Reddy Keshava Reddy<sup>1</sup>, Hamid Reza Rafieian-Naeini<sup>2</sup>, Seshidhar R. Gudidoddi<sup>1</sup>, Sai Kumar Reddy Ragyari<sup>1</sup>, Ishwari Gyawali<sup>1</sup>, Venkata Sesha Reddy Choppa<sup>3</sup>, Woo K. Kim<sup>1</sup> <sup>1</sup>University of Georgia, Athens, Georgia, United States; <sup>2</sup>University of Georgia, Athens, Georgia, United States; <sup>3</sup>University of Georgia, Athens, Georgia, United States
- 9:15 AM 10 **In vitro assessment evaluating the effect of auranofin, a thioredoxin reductase inhibitor, on *Histomonas meleagridis***  
Taylor Schubauer\*<sup>1GS</sup>, Evy Hafer<sup>1</sup>, Aaron Forga<sup>1</sup>, Kasey A. Matusik<sup>1</sup>, Karen Echevarria<sup>1</sup>, Melissa Martinez<sup>1</sup>, Juan D. Latorre<sup>1</sup>, Zhicheng Dou<sup>2</sup>, Danielle Graham<sup>1</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup>Clemson University, Clemson, South Carolina, United States
- 9:30 AM 11 **Cecal microbiome profiles in directly inoculated and laterally exposed turkey poults during *Histomonas meleagridis* challenge**  
Abhisek Niraula\*<sup>1GS</sup>, Davis A. Fenster<sup>1</sup>, Gabriella C. Ribeiro<sup>1</sup>, Paniz Zarghami Dastjerdi<sup>1</sup>, Alberta L. Fuller<sup>1</sup>, Rami A. Dalloul<sup>1</sup> <sup>1</sup>University of Georgia, Athens, Georgia, United States
- 9:45 AM 12 **Evaluation of the effect of wheat-based diets on the intestinal microbiome of turkey poults infected with *Cochlosoma anatis***  
Makenly E. Coles\*<sup>2GS</sup>, Jamie Blankenship<sup>2</sup>, Brett Hale<sup>1</sup>, Kabel Robbins<sup>3</sup>, Elise Gerken<sup>3</sup>, Billy M. Hargis<sup>2</sup>, Juan D. Latorre<sup>2</sup>, Danielle Graham<sup>2</sup> <sup>1</sup>AgriGro Inc., Doniphan, Missouri, United States; <sup>2</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>3</sup>Butterball, Ozark, Arkansas, United States

### Student Competition: Metabolism and Nutrition - Amino Acids I

Moderator: Pratima Adhikari, MS State

203 (B-D)

- 8:00 AM 13 **Laying hens' responses to graded dietary crude protein reduction in a conventional cage system**  
Byron Xavier Munoz\*<sup>1GS</sup>, Mylena Tückmantel<sup>2</sup>, Sara E. Benavides Martínez<sup>1</sup>, Cayo Pereira<sup>1</sup>, Isabela Maimone<sup>1</sup>, Claudio Ximenes<sup>1</sup>, Cristiane S. Araújo<sup>2</sup>, Lucio F. Araujo<sup>1</sup> <sup>1</sup>University of Sao Paulo, Pirassununga, Sao Paulo, Brazil; <sup>2</sup>University of Sao Paulo, Pirassununga, SP, Brazil



## FRIDAY, JULY 10

- |         |    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:15 AM | 14 | <p><b>Re-evaluating digestible lysine requirements in modern male turkey poults from 0-6 weeks of age</b><br/>         Darby R. Boontarue*<sup>1GS</sup>, Ann R. Sisson<sup>1</sup>, John W. Boney<sup>1</sup> <sup>1</sup><i>The Pennsylvania State University, University Park, Pennsylvania, United States</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 8:30 AM | 15 | <p><b>Determination of Amino Acid Digestibility in Conventional and Low Oligosaccharide Soybean Meal Using Cecectomized Roosters, Broilers, and Turkeys</b><br/>         Kasey A. Matusik*<sup>1GS</sup>, Seth Hufford<sup>1</sup>, Aaron Forga<sup>1</sup>, Erin Zess<sup>2</sup>, Matthew Begemann<sup>2</sup>, Danielle Graham<sup>1</sup>, Benjamin Parsons<sup>1</sup><br/> <sup>1</sup><i>University of Arkansas, Fayetteville, Arkansas, United States;</i><br/> <sup>2</sup><i>Confluence Genetics, St. Louis, Missouri, United States</i></p>                                                                                                                                                                                                                                                                                                                           |
| 8:45 AM | 16 | <p><b>In ovo feeding of monosodium glutamate improved early cardiac development in broiler chicks</b><br/>         Janandani N. Lakse Mudiyanseleage*<sup>1GS</sup>, Thi T. Nguyen<sup>1</sup>, Eugeni Roura<sup>1</sup> <sup>1</sup><i>Queensland Alliance for Agriculture and Food Innovation, The University of Queensland, Brisbane, Queensland, Australia</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 9:00 AM | 17 | <p><b>Comparative effects of guanidinoacetic acid and L-citrulline on growth performance, breast meat yield, and plasma amino acid profiles of broiler chickens fed arginine deficient diets and exposed to cyclic heat stress</b><br/>         Vahideh S. Sadr*<sup>1GS</sup>, Vivienne Inhuber<sup>2</sup>, Mehdi Toghyani<sup>3</sup>, David Cadogan<sup>4</sup>, Sonia Liu<sup>1</sup>, Reza Barekatin<sup>5</sup> <sup>1</sup><i>The University of Sydney, Brownlow Hill, New South Wales, Australia;</i> <sup>2</sup><i>Alzchem Trostberg GmbH, Trostberg, Germany;</i> <sup>3</sup><i>The University of Sydney, Brownlow Hill, New South Wales, Australia;</i> <sup>4</sup><i>Feedworks, Melbourne, Victoria, Australia;</i> <sup>5</sup><i>Sydney School of Veterinary Science, Faculty of Science, The University of Sydney, Sydney, New South Wales, Australia</i></p> |
| 9:15 AM | 18 | <p><b>Responses of broilers to increasing amino acid density from soybean meal or feed-grade amino acids</b><br/>         Julie Ross Datuin*<sup>1GS</sup>, Marcelo Silva<sup>2</sup>, Roshan Adhikari<sup>3</sup>, Jason T. Lee<sup>4</sup>, Samuel Rochell<sup>5</sup> <sup>1</sup><i>Auburn University, Auburn, Alabama, United States;</i> <sup>2</sup><i>Aviagen Inc, Madison, Alabama, United States;</i> <sup>3</sup><i>CJ Bio America Inc, Downers Grove, Illinois, United States;</i> <sup>4</sup><i>CJ Bio America, Goliad, Texas, United States;</i> <sup>5</sup><i>Auburn University, Auburn, Alabama, United States</i></p>                                                                                                                                                                                                                                         |



# FRIDAY, JULY 10

F R I

- 9:30 AM 19 **Effects of dietary protein source and limestone level on gizzard digesta pH in broiler chickens**  
 Florence W. Nyaga\*<sup>1GS</sup>, Jennifer L. Ellis<sup>2</sup>, marie-pierre letourneau montminy<sup>4</sup>, Munene Kithama<sup>3</sup>, Virginie Blanvillain<sup>5</sup>, David Trott<sup>6</sup>, Elijah G. Kiarie<sup>7</sup> <sup>1</sup>University of Guelph, Guelph, Ontario, Canada; <sup>2</sup>University of Guelph, Guelph, Ontario, Canada; <sup>3</sup>Pwani University, Kilifi, Kenya; <sup>4</sup>Université Laval, Quebec, Quebec, Canada; <sup>5</sup>AB Vista, Marlborough, United Kingdom; <sup>6</sup>Wallenstein Feed & Supply Ltd., Wallenstein, Ontario, Canada; <sup>7</sup>University of Guelph, Guelph, Ontario, Canada
- 9:45 AM 20 **Assessing the interactive effects of alanine, glycine, and proline in male broilers fed reduced crude protein diets from 15 to 35 days**  
 Kenneth B. Nelson\*<sup>1GS</sup>, Pablo Escovar Ruidiaz<sup>1</sup>, Spencer T. Karn<sup>1</sup>, Virginia G. Slick<sup>1</sup>, Savannah Wells<sup>1</sup>, Michael Kidd<sup>1</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States

## Student Competition: Metabolism and Nutrition - General Nutrition I

Moderator: Anna Rogiewicz, University of Manitoba

201 (A-F)

- 8:00 AM 21 **The apparent metabolizable energy and standardized ileal amino acid digestibility of low-protein soybean meals in broiler chickens**  
 Sujitha Veeraganti\*<sup>3GS</sup>, Bhargavi Kasireddy<sup>2</sup>, Allison Froehbrodt<sup>1</sup>, Anya Singhal<sup>1</sup>, Gabrielle Lum<sup>1</sup>, Olanrewaju Ayinde<sup>3</sup>, RAMA DEVI KOLLI<sup>4</sup>, June Hyeok Yoon<sup>3</sup>, Oluyinka A. Olukosi<sup>5</sup> <sup>1</sup>University of Georgia, Athens, Georgia, United States; <sup>2</sup>University of Georgia, Athens, Georgia, United States; <sup>3</sup>University of Georgia, Athens, Georgia, United States; <sup>4</sup>University of Georgia, Athens, Georgia, United States; <sup>5</sup>University of Georgia, Athens, Georgia, United States
- 8:15 AM 22 **Nutritional modulation of gut function during *Eimeria maxima* challenge: role of dietary fiber in broiler chickens diets**  
 Bhargavi Kasireddy\*<sup>1GS</sup>, Oluyinka A. Olukosi<sup>1</sup> <sup>1</sup>University of Georgia, Athens, Georgia, United States



## FRIDAY, JULY 10

- 8:30 AM 23 Evaluating the effects of full-fat mealworm larvae meal inclusion on Ross 308 male broiler performance and apparent ileal amino acid digestibility**  
 Christian K. Crabtree\*<sup>1GS</sup>, Darby R. Boontarue<sup>2</sup>, Ann R. Sisson<sup>3</sup>, John W. Boney<sup>4</sup> <sup>1</sup>*Pennsylvania State University, Patton Township, Pennsylvania, United States*; <sup>2</sup>*The Pennsylvania State University, State College, Pennsylvania, United States*; <sup>3</sup>*The Pennsylvania State University, University Park, Pennsylvania, United States*; <sup>4</sup>*Penn State University, University Park, Pennsylvania, United States*
- 8:45 AM 24 Starch–protein digestive dynamics drive energy partitioning and nutrient deposition in broilers fed reduced crude protein diets**  
 Damilola Kareem\*<sup>12GS</sup>, Eunjoo Kim<sup>12</sup>, Shemil Macelline<sup>12</sup>, Tahir Mahmood<sup>3</sup>, Yves Mercier<sup>3</sup>, Mehdi Toghyani<sup>12</sup>, Peter H. Selle<sup>14</sup>, Sonia Liu<sup>12</sup> <sup>1</sup>*The University of Sydney, Sydney, New South Wales, Australia*; <sup>2</sup>*The University of Sydney, Sydney, New South Wales, Australia*; <sup>3</sup>*Adisseo France S.A.S., 69192 Saint Fons, France*; <sup>4</sup>*The University of Sydney, Sydney, New South Wales, Australia*
- 9:00 AM 25 Determination of phosphorus availability in conventional distillers dried grains with solubles and corn fermented protein with and without phytase use during fermentation at the ethanol plant**  
 Luke Parisi\*<sup>1GS</sup>, Seth Hufford<sup>2</sup>, Benjamin Parsons<sup>3</sup> <sup>1</sup>*University of Arkansas, Fayetteville, Arkansas, United States*; <sup>2</sup>*University of Arkansas, Siloam Springs, Arkansas, United States*; <sup>3</sup>*University of Arkansas, Fayetteville, Arkansas, United States*
- 9:15 AM 26 In Ovo  $\alpha$ -Ketoglutarate Modulates Plasma and Hepatic Antioxidant Defense in Broilers Under Cyclic Heat Stress**  
 Vaishali Gupta\*<sup>12GS</sup>, Yun-Ji Hwang<sup>12</sup>, Chris Major Ncho<sup>12</sup>, Yang-Ho Choi<sup>12</sup> <sup>1</sup>*Gyeongsang National University, Jinju-si, Korea (the Republic of)*; <sup>2</sup>*Gyeongsang National University, Jinju, Gyeongsangnam-do, Korea (the Republic of)*
- 9:30 AM 27 Further evaluation of amino acid digestibility among different soybeans varying in protease inhibitors**  
 Saul Rosales\*<sup>1GS</sup>, Pam L. Utterback<sup>1</sup>, Wonseok Kim<sup>2</sup>, Sunhyung Kim<sup>2</sup>, Hari B. Krishnan<sup>3</sup>, Carl Parsons<sup>4</sup> <sup>1</sup>*University of Illinois Urbana-Champaign, Champaign, Illinois, United States*; <sup>2</sup>*University of Missouri, Columbia, Missouri, United States*; <sup>3</sup>*USDA-ARS, Columbia, Missouri, United States*; <sup>4</sup>*University of Illinois, Champaign, Illinois, United States*



## FRIDAY, JULY 10

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| 9:45 AM  | 28   | <p><b>Apparent metabolizable energy (AME) of soybean soapstock in chickens.</b><br/>Bethany Alexander*<sup>1GS</sup>, Mike Persia<sup>1</sup>, Kelsey Back<sup>1</sup> <sup>1</sup><i>Virginia Tech, Blacksburg, Virginia, United States</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 10:00 AM | 28.5 | <b>Break</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 10:45 AM | 29   | <p><b>Effects of dry fractionation and multienzyme supplementation on non-starch polysaccharide depolymerization and fiber digestibility of barley and its fractions in broiler chickens</b><br/>Kemi S. Kanani*<sup>1GS</sup>, Yanxing Niu<sup>1</sup>, Changning Yu<sup>2</sup>, Rex Newkirk<sup>3</sup>, Ruurd Zijlstra<sup>2</sup>, Martin C. Nyachoti<sup>1</sup>, Robert Patterson<sup>4</sup>, Anna Rogiewicz<sup>1</sup> <sup>1</sup><i>University of Manitoba, Winnipeg, Manitoba, Canada;</i> <sup>2</sup><i>University of Alberta, Edmonton, Alberta, Canada;</i> <sup>3</sup><i>University of Saskatchewan, Saskatoon, Saskatchewan, Canada;</i> <sup>4</sup><i>CBS Bio Platforms Inc., Calgary, Alberta, Canada</i></p> |
| 11:00 AM | 30   | <p><b>The effects of corn particle size and a 15 x coccidial vaccine challenge on 21-to-42-day hen poult performance and nutrient digestibility</b><br/>Jennifer A. Blair*<sup>1GS</sup>, Alyssa Lyons<sup>1</sup>, Mike Persia<sup>2</sup> <sup>1</sup><i>Virginia Tech, Blacksburg, Virginia, United States;</i> <sup>2</sup><i>Virginia Tech, Blacksburg, Virginia, United States</i></p>                                                                                                                                                                                                                                                                                                                                         |
| 11:15 AM | 31   | <p><b>Amino acid digestibility and metabolizable energy content in western Canadian faba bean (<i>Vicia faba</i>) for laying hens</b><br/>Matt Oryschak*<sup>1GS</sup>, Doug Korver<sup>12</sup> <sup>1</sup><i>University of Alberta, Edmonton, Alberta, Canada;</i> <sup>2</sup><i>Alpine Poultry Nutrition, Inc., Edmonton, Alberta, Canada</i></p>                                                                                                                                                                                                                                                                                                                                                                               |
| 11:30 AM | 32   | <p><b>Effect of extra arginine and glutamine supplementation in reduced-protein diets on growth performance, plasma metabolites, and amino acid metabolism in <i>Eimeria</i>-challenged broiler chickens raised on clean or reused litter</b><br/>June Hyeok Yoon*<sup>1GS</sup>, Bhargavi Kasireddy<sup>1</sup>, RAMA DEVI KOLLI<sup>1</sup>, Sujitha Veeraganti<sup>1</sup>, Olanrewaju Ayinde<sup>1</sup>, Oluyinka A. Olukosi<sup>1</sup> <sup>1</sup><i>University of Georgia, Athens, Georgia, United States</i></p>                                                                                                                                                                                                           |
| 11:45 AM | 33   | <p><b>Allometric organ growth and tibia development of two modern broiler genotypes and a heritage meat-type chicken</b><br/>Erasmus A. Flores Granados*<sup>1GS</sup>, Samuel Rochell<sup>1</sup>, Bryan Fancher<sup>2</sup> <sup>1</sup><i>Auburn University, Auburn, Alabama, United States;</i> <sup>2</sup><i>Aviagen, Inc., Huntsville, Alabama, United States</i></p>                                                                                                                                                                                                                                                                                                                                                         |



# FRIDAY, JULY 10

- 12:00 PM 34 **Effects of ExPress® Soymeal on Growth Performance and Feed Conversion Efficiency in Broiler Chickens**  
 Tanner Thornton\*<sup>1GS</sup>, Tom Tabler<sup>1</sup>, Yang Zhao<sup>1</sup>, Michael Kidd<sup>2</sup>, Janeth Colina<sup>3</sup>, Tong Wang<sup>4</sup>, Jie Wu<sup>1</sup>, Manita Kafle<sup>1</sup>, Savannah Wells<sup>2</sup>, Supun Hewage<sup>1</sup>, Shawn Hawkins<sup>5</sup> <sup>1</sup>University of Tennessee, Knoxville, Tennessee, United States; <sup>2</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>3</sup>Insta-Pro International, Grimes, Iowa, United States; <sup>4</sup>University of Tennessee, Knoxville, Tennessee, United States; <sup>5</sup>University of Tennessee, Knoxville, Tennessee, United States

FR I

## Student Competition: Microbiology and Food Safety I

Moderator: Kuan Ling Liu, USDA

202 (A-D)

- 8:00 AM 35 **Farm to Processing Microbial Population Dynamics in a Non-Conventional Poultry Operation**  
 Afrina Akter Turna\*<sup>1GS</sup>, Eniola Betiku<sup>1</sup>, Tomi Obe<sup>23</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>3</sup>Center for Food Safety, University of Arkansas Division of Agriculture, Fayetteville, Arkansas, United States
- 8:15 AM 36 **Sanitation-linked microbial ecology and diversity on equipment in pastured poultry processing**  
 Eniola Betiku\*<sup>1GS</sup>, Tomi Obe<sup>12</sup> <sup>1</sup>University of Arkansas Division of Agriculture, Fayetteville, Arkansas, United States; <sup>2</sup>University of Arkansas Division of Agriculture, Fayetteville, Arkansas, United States
- 8:30 AM 37 **Evaluation of airborne bacterial recovery using three bioaerosol sampling approaches in a broiler house**  
 Jacob T. Porzeinski\*<sup>1GS</sup>, Lindsey A. Wythe<sup>2</sup>, Audrey McElroy<sup>1</sup>, Morgan Farnell<sup>1</sup> <sup>1</sup>Texas A&M University, College Station, Texas, United States; <sup>2</sup>Texas A&M University, College Station, Texas, United States
- 8:45 AM 38 **Assessing the Impact of Feed and Water Withdrawal in Poultry Production Processes Through Litter, Carcass, and Gastrointestinal Microbiome**  
 Ashley A. Tarcin\*<sup>1GS</sup>, Elena G. Olson<sup>2</sup>, Steven C. Ricke<sup>3</sup> <sup>1</sup>University of Wisconsin- Madison, Madison, Wisconsin, United States; <sup>2</sup>UW-Madison, Madison, Wisconsin, United States; <sup>3</sup>University of Wisconsin, Madison, Wisconsin, United States



## FRIDAY, JULY 10

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| 9:00 AM  | 39   | <p><b>Impact of Peanut Skin Supplementation and <i>Salmonella</i> Challenge on Gut Microbiota of Broiler Chickens</b></p> <p>Yabaiz Tahir*<sup>1GS</sup>, Lin Walker<sup>2</sup>, Justin H. Lowery<sup>3</sup>, Lauren Anderson<sup>4</sup>, Natalie Roberts<sup>1</sup>, Thien C. Vu<sup>5</sup>, Ondulla T. Toomer<sup>5</sup>, Monika Proszkowiec-Weglarz<sup>6</sup> <sup>1</sup><i>North Carolina State University, Raleigh, North Carolina, United States;</i> <sup>2</sup><i>NC State University, Raleigh, North Carolina, United States;</i> <sup>3</sup><i>North Carolina State University, Raleigh, North Carolina, United States;</i> <sup>4</sup><i>North Carolina State University, Durham, North Carolina, United States;</i> <sup>5</sup><i>Agricultural Research Service, US Dept. of Agriculture, Raleigh, North Carolina, United States;</i> <sup>6</sup><i>USDA, ARS, Beltsville, Maryland, United States</i></p> |
| 9:15 AM  | 40   | <p><b>Egg barn microbiome influence on biofilm formation, sanitizer effectiveness and <i>Salmonella</i> persistence</b></p> <p>Sarah Cromb*<sup>1GS</sup>, Daniel Mayboca Padilla<sup>2</sup>, Hooman Derakshani<sup>2</sup>, Miguel Uyaguari<sup>2</sup>, Claudia Narvaez Bravo<sup>2</sup> <sup>1</sup><i>University of Manitoba, Winnipeg, Manitoba, Canada;</i> <sup>2</sup><i>University of Manitoba, Winnipeg, Manitoba, Canada</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 9:30 AM  | 41   | <p><b>Assessment of transport coop bacteriota in response to disinfection</b></p> <p>Lindsey A. Wythe*<sup>1GS</sup>, Vignesh Palanisami<sup>2</sup>, Sapna C. Dass<sup>2</sup>, Yuhua Z. Farnell<sup>3</sup>, Morgan Farnell<sup>1</sup> <sup>1</sup><i>Texas A&amp;M University, College Station, Texas, United States;</i> <sup>2</sup><i>Texas A&amp;M University, College Station, Texas, United States;</i> <sup>3</sup><i>Texas A&amp;M University, College Station, Texas, United States</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 9:45 AM  | 42   | <p><b>Probiotic formulations of <i>Lactobacillus paracasei</i> reduce <i>Salmonella</i> colonization in laying hens and egg contamination</b></p> <p>Kham B. Khatri*<sup>1GS</sup>, Veera Venkata Praveen Raja Kosuri<sup>1</sup>, Yuying Ren<sup>1</sup>, Anjana Thankachan<sup>1</sup>, Alexandra Garlick<sup>1</sup>, Ajayveer Sandhu<sup>1</sup>, Panshul Attri<sup>1</sup>, Mary Anne Amalaradjou<sup>1</sup> <sup>1</sup><i>University of Connecticut, Storrs, Connecticut, United States</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 10:00 AM | 42.5 | <p><b>Break</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |


**FRIDAY, JULY 10**

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| 10:45 AM | 43 | <p><b>Effect of a short- and medium- chain monoglycerides blend on <i>Salmonella</i> colonization, translocation and growth performance in broilers.</b></p> <p>Karla V. Casco Gomez*<sup>1GS</sup>, William A. Echeverria Mejia<sup>2</sup>, Shijinaraj Manjankattil Rajan<sup>4</sup>, Muhammad Naeem<sup>5</sup>, Yagya Adhikari<sup>6</sup>, Arjmand Fatima<sup>1</sup>, Rabin Raut<sup>1</sup>, Farazi Rahman<sup>1</sup>, Ruby Paudel<sup>1</sup>, Dianna Bourassa<sup>7</sup>, Sabin Poudel<sup>8</sup>, Samuel Rochell<sup>9</sup>, Jinquan Wang<sup>10</sup>, Jundi Liu<sup>3</sup> <sup>1</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>2</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>3</sup><i>Eastman Chemical Company, Kingsport, Tennessee, United States</i>; <sup>4</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>5</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>6</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>7</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>8</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>9</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>10</sup><i>Auburn University, Auburn, Alabama, United States</i></p> |
| 11:00 AM | 44 | <p><b>Non-invasive detection of <i>Salmonella</i> contamination in SPF White Leghorn eggs via VOC profiling at cold storage temperatures</b></p> <p>Vivienne Catt*<sup>1UG</sup>, Christopher A. Heist<sup>1</sup>, Caitlin Harris<sup>2</sup>, Olga Kemenova<sup>3</sup>, Daniel Sabo<sup>4</sup>, Stephanie Richter<sup>5</sup> <sup>1</sup><i>Georgia Tech Research Institute, Atlanta, Georgia, United States</i>; <sup>2</sup><i>USDA-ARS National Poultry Research Center, Athens, Georgia, United States</i>; <sup>3</sup><i>Georgia Institute of Technology, Atlanta, Georgia, United States</i>; <sup>4</sup><i>Georgia Tech Research Institute, Atlanta, Georgia, United States</i>; <sup>5</sup><i>Georgia Tech Research Institute, Atlanta, Georgia, United States</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 11:15 AM | 45 | <p><b>Effect of a multi strain <i>Bacillus</i> probiotic on <i>Salmonella</i> colonization in broiler chickens</b></p> <p>Rabin Raut*<sup>1GS</sup>, Sabin Poudel<sup>3</sup>, Samuel Rochell<sup>2</sup>, Jinquan Wang<sup>4</sup>, Zahidul H. Tushar<sup>1</sup>, Rishav Kumar<sup>1</sup>, Farazi Rahman<sup>1</sup>, Muhammad Naeem<sup>5</sup>, Dianna Bourassa<sup>1</sup> <sup>1</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>2</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>3</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>4</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>5</sup><i>Auburn University, Auburn, Alabama, United States</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 11:30 AM | 46 | <p><b>Effects of dietary organic acids supplementation on broiler growth performance and <i>Salmonella</i> colonization</b></p> <p>William A. Echeverria Mejia*<sup>1GS</sup>, Shijinaraj Manjankattil Rajan<sup>1</sup>, Muhammad Naeem<sup>1</sup>, Yagya Adhikari<sup>1</sup>, Arjmand Fatima<sup>1</sup>, Rabin Raut<sup>1</sup>, Karla V. Casco Gomez<sup>1</sup>, Farazi Rahman<sup>1</sup>, Ruby Paudel<sup>1</sup>, Dianna Bourassa<sup>1</sup>, Sabin Poudel<sup>1</sup>, Samuel Rochell<sup>1</sup>, Jinquan Wang<sup>1</sup>, Jundi Liu<sup>2</sup> <sup>1</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>2</sup><i>Eastman Chemical Company, Kingsport, Tennessee, United States</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |



# FRIDAY, JULY 10

FRI

- 11:45 AM 47 **Synergetic effect of chemical stabilizers on peracetic acid and resulting antimicrobial ability**  
 Kortney Martin\*<sup>1UG</sup>, Daniel Sabo<sup>2</sup>, Stephanie Richter<sup>3</sup>, Vivienne Catt<sup>1</sup> <sup>1</sup>*Georgia Tech Research Institute, Atlanta, Georgia, United States*; <sup>2</sup>*Georgia Tech Research Institute, Atlanta, Georgia, United States*; <sup>3</sup>*Georgia Tech Research Institute, Atlanta, Georgia, United States*
- 12:00 PM 48 **Microbial Recovery of Layer Hen Carcasses Treated with a Poultry Mortality Dehydrator**  
 John C. Poole\*<sup>1GS</sup>, Lindsey A. Wythe<sup>2</sup>, Emma J. Jungman<sup>3</sup>, Zong Lui<sup>3</sup>, Morgan Farnell<sup>4</sup> <sup>1</sup>*Texas A&M University, College Station, Texas, United States*; <sup>2</sup>*Texas A&M University, College Station, Texas, United States*; <sup>3</sup>*Texas A&M AgriLife Extension, College Station, Texas, United States*; <sup>4</sup>*Texas A&M University, College Station, Texas, United States*

## Student Competition: Immunology, Health and Disease - Feed Additives

Moderator: Doyun Goo, University of Georgia

206 (A-D)

- 8:30 AM 49 **Effects of black soldier fly larvae oil on growth performance, gut permeability, and *Clostridium perfringens* colonization in broiler chickens under Necrotic enteritis challenge**  
 Ishwari Gyawali\*<sup>1GS</sup>, Anil Gautam<sup>1</sup>, Doyun Goo<sup>1</sup>, Saikumar R. Ragyari<sup>1</sup>, Hemanth R. Katha<sup>1</sup>, Seshidhar R. Gudidoddi<sup>1</sup>, Woo K. Kim<sup>1</sup> <sup>1</sup>*University of Georgia, Athens, Georgia, United States*
- 8:45 AM 50 **Exploratory meta-analysis of antibiotic alternatives (probiotics and prebiotics) on growth performance in broiler chickens before, during, and after experimental necrotic enteritis infection**  
 Nathana Rudio Furlani\*<sup>1GS</sup>, Rony Riveros<sup>2</sup>, Marie Pierre Létourneau-Montminy<sup>3</sup>, Nilva Sakomura<sup>2</sup> <sup>1</sup>*Sao Paulo State University, Jaboticabal, SP, Brazil*; <sup>2</sup>*Sao Paulo State University, Jaboticabal, SP, Brazil*; <sup>3</sup>*Université Laval, Quebec City, Quebec, Canada*



## FRIDAY, JULY 10

- 9:00 AM 51 Yeast-derived additives improve intestinal morphology in broilers under a necrotic enteritis challenge**  
 Gabriella C. Ribeiro\*<sup>1GS</sup>, Davis A. Fenster<sup>1</sup>, Bingqi Dong<sup>1</sup>, Abhisek Niraula<sup>1</sup>, Paniz Zarghami Dastjerdi<sup>1</sup>, Leandro Royo<sup>2</sup>, Mariel Neves Tavares<sup>2</sup>, Rami A. Dalloul<sup>1</sup> <sup>1</sup>*University of Georgia, Athens, Georgia, United States;* <sup>2</sup>*Olmix SA, Bréhan, Morbihan, France*
- 9:15 AM 52 The effect of dietary supplementation of Organic Chaga Mushroom in broilers challenged with Necrotic Enteritis**  
 Venkata Prathap Reddy Keshavareddy\*<sup>1GS</sup>, Hemanth Reddy Katha<sup>3</sup>, Hamid Reza Rafeiean-Naeini<sup>5</sup>, Sai Kumar Reddy Ragyari<sup>4</sup>, Seshidhar Reddy Gudidoddi<sup>6</sup>, Indira Neupane<sup>3</sup>, Venkata Sessa Reddy Choppa<sup>7</sup>, Woo K. Kim<sup>2</sup> <sup>1</sup>*University of Georgia, Athens, Georgia, United States;* <sup>2</sup>*University of Georgia, Athens, Georgia, United States;* <sup>3</sup>*University of Georgia, Athens, Georgia, United States;* <sup>4</sup>*UNIVERSITY OF GEORGIA, Athens, Georgia, United States;* <sup>5</sup>*University of Georgia, Athens, Georgia, United States;* <sup>6</sup>*University of Georgia, Athens, Georgia, United States;* <sup>7</sup>*University of Georgia, Athens, Georgia, United States*
- 9:30 AM 53 Evaluation of gallic acid supplementation on growth performance and gut health in broilers under Coccidiosis**  
 Indira Neupane\*<sup>1GS</sup>, Anil Gautam<sup>1</sup>, Doyun Goo<sup>1</sup>, Ishwari Gyawali<sup>1</sup>, Deependra Paneru<sup>1</sup>, Woo K. Kim<sup>1</sup> <sup>1</sup>*University of Georgia, Athens, Georgia, United States*
- 9:45 AM 54 Safety Evaluation of Bacteriophage vB\_SalS\_KY05 Lysate via Drinking Water: Impacts on Health, Egg Production, and Intestinal Microbiota in Laying Hens**  
 Hsiao-Hui Huang\*<sup>1GS</sup>, Wun-Yuan Wu<sup>1</sup>, Yuan-Yu Lin<sup>1</sup> <sup>1</sup>*National Taiwan University, Taipei, Taiwan*
- 10:00 AM Break**
- 10:45 AM 55 Jejunal transcriptomic responses to inorganic and amino acid complexed zinc and iron in ascites-challenged broilers**  
 Jamie L. Fourie\*<sup>12GS</sup>, Kyle M. Venter<sup>13</sup>, Peter Plumstead<sup>4</sup>, Cibele A. Torres<sup>5</sup>, Luis F. Romero<sup>6</sup>, Laura M. Payling<sup>6</sup> <sup>1</sup>*Neuro Livestock Research, Brits, Gauteng, South Africa;* <sup>2</sup>*University of Stellenbosch, Stellenbosch, Gauteng, South Africa;* <sup>3</sup>*University of Pretoria, Pretoria, South Africa;* <sup>4</sup>*Neuro Livestock Research, Lanseria, South Africa;* <sup>5</sup>*Zinpro Corporation, Eden Prairie, Minnesota, United States;* <sup>6</sup>*Biofractal, Loule, Algarve, Portugal*


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- 11:00 AM 56 **Cecal microbiota and short-chain fatty acids are associated with growth performance and organ attributes in pullets fed omega-3 fatty acids or yeast bioactives**  
Paul K. WALIAULA\*<sup>1,2,6S</sup>, Xianhua Yin<sup>2</sup>, Dion Lepp<sup>2</sup>, Elijah G. Kiarie<sup>3</sup>, Moussa S. Diarra<sup>2</sup> <sup>1</sup>University of Guelph, Guelph, Ontario, Canada; <sup>2</sup>Guelph Research and Development Center Agriculture and Agri-Food Canada, Guelph, Ontario, Canada; <sup>3</sup>University of Guelph, Guelph, Ontario, Canada
- 11:15 AM 57 **Natural Adsorbents Attenuate *Clostridium perfringens* Virulence via Toxin Sequestration and Modulation of Host Cellular Responses in Chicken Jejunal Epithelial Cells**  
Samuel E. Agada\*<sup>1,6S</sup>, Iyabo W. Oluseyifunmi<sup>1</sup>, Morgan Farnell<sup>2</sup>, Audrey McElroy<sup>1</sup>, Denise Caldwell<sup>3</sup>, Youjun Deng<sup>4</sup>, Timothy Phillips<sup>5</sup>, Samson Oladokun<sup>6</sup>, J. A. Byrd<sup>3</sup> <sup>1</sup>Texas A&M University, College Station, Texas, United States; <sup>2</sup>Texas A&M University, College Station, Texas, United States; <sup>3</sup>USDA, College Station, Texas, United States; <sup>4</sup>Texas A&M University, College Station, Texas, United States; <sup>5</sup>Texas A&M University, College Station, Texas, United States; <sup>6</sup>Texas A&M University, College Station, Texas, United States

## Student Competition: Metabolism and Nutrition - Enzymes

Moderator: Oluyinka Olukosi, University of Georgia

206 (E-F)

- 9:00 AM 58 **Effects of dietary  $\beta$ -Mannanase on growth performance, nutrient utilization, and intestinal integrity in broiler chickens**  
Xin Yue\*<sup>1,6S</sup>, Yuying Huang<sup>1</sup>, Xiaofei Yang<sup>2</sup>, Xuemeng Si<sup>1</sup>, Pingyu Xia<sup>2</sup>, Rui Zheng<sup>1</sup>, Qiong Liu<sup>2</sup>, Wen Chen<sup>1</sup>, Yanqun Huang<sup>1</sup>, Huaiyong Zhang<sup>1</sup> <sup>1</sup>Henan Agriculture University, Zhengzhou, China; <sup>2</sup>Beijing Strowin Biotechnology Co., Ltd., Beijing, China
- 9:15 AM 59 **Evaluation of metabolizable energy release from carbohydrase enzymes using restrict-fed broiler chickens and precision-fed roosters**  
McKayla Ward\*<sup>1,6S</sup>, Seth Hufford<sup>2</sup>, Danielle Graham<sup>3</sup>, Benjamin Parsons<sup>4</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup>University of Arkansas, Siloam Springs, Arkansas, United States; <sup>3</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>4</sup>University of Arkansas, Fayetteville, Arkansas, United States


**FRIDAY, JULY 10**

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| 9:30 AM | 60 | <p><b>Evaluation of the effects of sodium bisulfate and exogenous phytase supplementation on phytic acid hydrolysis, mineral digestibility, P bioavailability, and gastrointestinal pH in precision-fed roosters and restrict-fed broiler chickens</b></p> <p>Rebekah Drysdale*<sup>1GS</sup>, Seth Hufford<sup>1</sup>, Benjamin Parsons<sup>1</sup><br/> <sup>1</sup><i>University of Arkansas, Fayetteville, Arkansas, United States</i></p>                                                                                                                                                                                                           |
| 9:45 AM | 61 | <p><b>Effects of dietary fiber and fiber-degrading enzymes on egg production, egg quality, and organ weights in Dekalb white laying hens during an extended laying cycle</b></p> <p>Lonita Manoa*<sup>1GS</sup>, Anna Fickler<sup>2</sup>, Adebayo Sokale<sup>3</sup>, Fernando Laguna<sup>5</sup>, Elijah G. Kiarie<sup>4</sup> <sup>1</sup><i>University of Guelph, Guelph, Ontario, Canada;</i> <sup>2</sup><i>BASF SE, Ludwigshafen, Germany;</i> <sup>3</sup><i>BASF Corp, Florham park, New Jersey, United States;</i> <sup>4</sup><i>University of Guelph, Guelph, Ontario, Canada;</i> <sup>5</sup><i>BASF Espanola SLU, Barcelona, Spain</i></p> |

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## Student Competition: Genetics and Molecular Biology

*Moderator: Elizabeth Greene, University of Arkansas*

206 (E-F)

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| 10:45 AM | 62 | <p><b>Computational Identification of Natural Inhibitors Targeting Fiber Proteins of FAdV-1 and FAdV-4 Through Integrated Virtual Screening and Molecular Dynamics Simulations</b></p> <p>Amina Kardoudi*<sup>12GS</sup>, Salaheddine Redouane<sup>2</sup>, Abdelouheb Benani<sup>2</sup>, Faouzi Kichou<sup>1</sup>, Siham Fallahi<sup>1</sup> <sup>1</sup><i>Institute of agriculture and veterinary medicine Hassan II, Casablanca, CASABLANCA, Morocco;</i> <sup>2</sup><i>Pasteur Institute of Morocco, CASABLANCA, CASABLANCA, Morocco</i></p>                                                                                                                                                                                         |
| 11:00 AM | 63 | <p><b>Population Structure of DNA Methylation and Its Relationship to Genetic Variation in Local Chicken Breeds</b></p> <p>Carl Kroger*<sup>12GS</sup>, Odile Roger<sup>1</sup>, Frederique Patel<sup>3</sup>, Sophie Leroux<sup>3</sup>, Romuald Rouger<sup>2</sup>, Michel Sourdioux<sup>2</sup>, Michele Trixie-Boichard<sup>1</sup>, Andreia Amaral<sup>4</sup>, Tatiana Zerjal<sup>1</sup>, Gwendal Restoux<sup>1</sup> <sup>1</sup><i>INRAE, Jouy-en-Josas, France;</i> <sup>2</sup><i>SYSSAF, Nouzilly, France;</i> <sup>3</sup><i>INRAE, Castanet-Tolosan, France;</i> <sup>4</sup><i>Universidade de Évora, Évora, Portugal</i></p>                                                                                                 |
| 11:15 AM | 64 | <p><b>Integrated multi-omics analysis reveals breed-specific regulatory networks and hybrid vigor signatures underlying meat quality differentiation in ducks</b></p> <p>Lionel Kinkpe*<sup>1GS</sup>, Gu Lihong<sup>2</sup>, Guo Shun<sup>3</sup>, Xu Zixin<sup>2</sup>, Hu Cheng<sup>2</sup>, Sun Yaya<sup>1</sup>, Bai Dingping<sup>4</sup>, Zheng Xinli<sup>3</sup>, Tieshan Xu<sup>2</sup>, Wang Xia<sup>1</sup> <sup>1</sup><i>Northwest A&amp;F University, Shaanxi, China;</i> <sup>2</sup><i>Tropical Crops Genetic Resources Institute, Haikou, China;</i> <sup>3</sup><i>Institute of Animal Science and Veterinary Medicine, Haikou, China;</i> <sup>4</sup><i>Fujian Agriculture and Forestry University, Fuzhou, China</i></p> |



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- 11:30 AM 65 **Probiotic supplementation alters transcriptomic regulation of the yolk sac membrane in association with glycogen accumulation during broiler embryonic development**  
Anjana Thankachan\*<sup>126S</sup>, Mairui Gao<sup>1</sup>, Mary Anne Amalaradjou<sup>2</sup>  
<sup>1</sup>University of Connecticut, Willington, Connecticut, United States;  
<sup>2</sup>University of Connecticut, Storrs, Connecticut, United States
- 11:45 AM 66 **Construction of Probiotic *Lactobacillus*-based vaccines for turkeys against Clostridial Dermatitis using a stable recombinant-gene expression system via chromosomal integration**  
Carissa Gaghan\*<sup>16S</sup>, Anil Thachil<sup>3</sup>, Rodolphe Barrangou<sup>2</sup>, Sarah O'Flaherty<sup>2</sup>, Ravi Kulkarni<sup>1</sup> <sup>1</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>2</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>3</sup>Rollins Animal Disease Diagnostic Laboratory, Raleigh, North Carolina, United States
- 12:00 PM 67 **Erythrocytes in Chicken Lung Upregulate Innate Immune and Antiviral Genes through Development as Revealed by Single-Cell Transcriptomics**  
Evan Ma\*<sup>16S</sup>, Rachel Read<sup>1</sup>, Edward Rice<sup>12</sup>, Rachel Carroll<sup>1</sup>, Paula Chen<sup>3</sup>, Wesley Warren<sup>154</sup> <sup>1</sup>University of Missouri, Columbia, Missouri, United States; <sup>2</sup>Ludwig Maximilian University of Munich, Munchen, Germany; <sup>3</sup>USDA-ARS, Columbia, Missouri, United States; <sup>4</sup>University of Missouri, Columbia, Missouri, United States; <sup>5</sup>University of Missouri, Columbia, Missouri, United States

### Student Competition: Immunology, Health and Disease - Immunology

Moderator: Alexander Yitbarek, University of Delaware

203 (B-D)

- 10:45 AM 68 **Efficiency of *In-Ovo* eBeam-inactivated *Clostridium perfringens* vaccine Against Necrotic Enteritis in SPF layer chickens**  
Mohamad O. Jaradat\*<sup>16S</sup>, Bikas R. Shah<sup>1</sup>, Shuja Majeed<sup>1</sup>, Iddris M. Habib<sup>1</sup>, Nimra Khalid<sup>1</sup>, Palmy Jesudhasan<sup>2</sup>, Ali Nazmi<sup>3</sup> <sup>1</sup>The Ohio State University, Wooster, Ohio, United States; <sup>2</sup>USDA-ARS, Fayetteville, Arkansas, United States; <sup>3</sup>Ohio State University, Loudonville, Ohio, United States



## FRIDAY, JULY 10

- 11:00 AM 69 In ovo delivery of DOTAP-based mRNA vaccine elicits distinct innate immune activation profiles following TLR agonists co-administration in chicken embryos**  
 Sadique Abdallah\*<sup>1GS</sup>, Daja Moultrie<sup>1</sup>, Janan Shoja Doost<sup>2</sup>, Khaled Abdelaziz<sup>3</sup>, Shayan Sharif<sup>2</sup>, Alexander Yitbarek<sup>4</sup>  
<sup>1</sup>University of Delaware, Newark, Delaware, United States; <sup>2</sup>University of Guelph, Guelph, Ontario, Canada; <sup>3</sup>Clemson University, Clemson, South Carolina, United States; <sup>4</sup>University of Delaware, Newark, Delaware, United States
- 11:15 AM 70 Enhanced proliferative capacity of liver ductal organoids from brown layer hens: a potential basis for spotty liver disease susceptibility**  
 Eva C. Trevino\*<sup>1GS</sup>, Giovana M. Longhini<sup>2</sup>, Jacob T. Porzeinski<sup>3</sup>, Lindsey A. Wythe<sup>4</sup>, Paula Chen<sup>5</sup>, Lianna R. Walker<sup>5</sup>, Morgan Farnell<sup>6</sup>, Yuhua Z. Farnell<sup>7</sup> <sup>1</sup>Texas A&M University, College Station, Texas, United States; <sup>2</sup>Texas A&M University, College Station, Texas, United States; <sup>3</sup>Texas A&M University, College Station, Texas, United States; <sup>4</sup>Texas A&M University, College Station, Texas, United States; <sup>5</sup>USDA-ARS, Columbia, Missouri, United States; <sup>6</sup>Texas A&M University, College Station, Texas, United States; <sup>7</sup>Texas A&M University, College Station, Texas, United States
- 11:30 AM 71 Effects of oviposition time and eggshell translucency on maternal antibody transfer in an aging broiler breeder flock**  
 Matthew Hughes\*<sup>1GS</sup>, Leticia Orellana<sup>2</sup>, Chrysta N. Beck<sup>1</sup>, Ken Macklin<sup>1</sup> <sup>1</sup>Mississippi State University, Mississippi State, Mississippi, United States; <sup>2</sup>Mississippi State University, Starkville, Mississippi, United States
- 11:45 AM 72 Establishment and characterization of the first chicken thymic epithelial cell organoid platform**  
 Giovana M. Longhini\*<sup>1GS</sup>, Eva C. Trevino<sup>1</sup>, Jacob T. Porzeinski<sup>2</sup>, Paula Chen<sup>3</sup>, Lianna R. Walker<sup>3</sup>, Morgan Farnell<sup>4</sup>, Yuhua Z. Farnell<sup>5</sup> <sup>1</sup>Texas A&M University, College Station, Texas, United States; <sup>2</sup>Texas A&M University, College Station, Texas, United States; <sup>3</sup>USDA-ARS, Columbia, Missouri, United States; <sup>4</sup>Texas A&M University, College Station, Texas, United States; <sup>5</sup>Texas A&M University, College Station, Texas, United States


**FRIDAY, JULY 10**
**Student Competition: Physiology and Reproduction I**

Moderator: Kuan Ling Liu, USDA

205 (A-D)

10:45 AM 73

**Effects of chronic mild heat stress on reproductive performance, physiological status, and HPO hormones in broiler breeders**

 Guangju Wang\*<sup>12GS</sup>, Zhenwu Huang<sup>2</sup>, Minhong Zhang<sup>2</sup>, Henry van den Brand<sup>1</sup> <sup>1</sup>Wageningen University & Research, Wageningen, Gelderland, Netherlands; <sup>2</sup>Chinese Academy of Agricultural Sciences, Beijing, Beijing, China

11:00 AM 74

**Do preventative supplementation with galacto-oligosaccharides and subsequent social stress alter aromatic amino acid profiles in low and high feather pecking laying hens?**

 Lea Nicklas\*<sup>12GS</sup>, Lucia Parráková<sup>3</sup>, Cornelia A. Karg<sup>3,4</sup>, Nienke van Staaveren<sup>1</sup>, Johanna M. Gostner<sup>3</sup>, Anna K. Shoveller<sup>1</sup>, Anna M. Edwards<sup>1</sup>, Paul Forsythe<sup>5</sup>, Alexandra Harlander<sup>12</sup> <sup>1</sup>University of Guelph, Guelph, Ontario, Canada; <sup>2</sup>University of Guelph, Guelph, Ontario, Canada; <sup>3</sup>Medical University of Innsbruck, Innsbruck, Austria; <sup>4</sup>University of Innsbruck, Innsbruck, Austria; <sup>5</sup>University of Alberta, Edmonton, Alberta, Canada

11:15 AM 75

**Melatonin Fun Times: Scotophase infusion of melatonin has no impact on geriatric laying hen production but decreases bone strength.**

 Isabella von Seggern\*<sup>1GS</sup>, Brittney J. Emmert<sup>1</sup>, Jenna M. Schober<sup>1</sup>, Gregory S. Fraley<sup>1</sup> <sup>1</sup>Purdue University, Columbia City, Indiana, United States

11:30 AM 76

**Effect of egg storage duration on broiler breeder embryonic gene expression**

 Paige D. Meisner\*<sup>1GS</sup>, Tom Porter<sup>1</sup>, Arianna Bond<sup>1</sup>, Ricardo G. Sierra Arroyo<sup>1</sup>, Boonyarit Kamkrathok<sup>1</sup>, Panpradub Sinpru<sup>1</sup>, Kristen Diehl<sup>2</sup> <sup>1</sup>University of Maryland, College Park, Maryland, United States; <sup>2</sup>USDA-ARS, Beltsville, Maryland, United States

11:45 AM 77

**Effects of metabolizable energy intake and body weight restriction on reproductive physiology and metabolic cues of layer pullets**

 Jo Ann Chew\*<sup>1GS</sup>, Thiago L. Noetzold<sup>1</sup>, Grégoy Y. Bédécarrats<sup>2</sup>, Leluo Guan<sup>3</sup>, Martin Zuidhof<sup>1</sup> <sup>1</sup>University of Alberta, Edmonton, Alberta, Canada; <sup>2</sup>University of Guelph, Guelph, Ontario, Canada; <sup>3</sup>The University of British Columbia, Vancouver, British Columbia, Canada

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- 12:00 PM 78 **Effects of Strains and Growth Trajectory on Body Composition and Entry into Lay in Layer Pullets**  
Josephine M. Sharka\*<sup>1GS</sup>, Ana K. Rentsch<sup>3</sup>, Grégoy Y. Bédécarrats<sup>2</sup> <sup>1</sup>University of Guelph, Guelph, Ontario, Canada; <sup>2</sup>University of Guelph, Guelph, Ontario, Canada; <sup>3</sup>University of Guelph, Guelph, Ontario, Canada

## Immunology, Health and Disease: Feed Additives I

206 (A-D)

- 1:15 PM 79 **Nutritional strategies to improve immune function, gut health and food safety**  
Morgan Farnell\*<sup>1</sup> <sup>1</sup>Texas A&M University, College Station, Texas, United States
- 1:45 PM 80 **Modulation of gut microbiota by dietary inclusion of grape pomace in coccidia-challenged broilers (*Gallus gallus*)**  
Milan K. Sharma\*<sup>1</sup>, Hannah Glesener<sup>2</sup>, Lee Voth-Gaeddert<sup>2</sup>, Elad Tako<sup>1</sup> <sup>1</sup>Cornell University, Ithaca, New York, United States; <sup>2</sup>Arizona State University, Tempe, Arizona, United States
- 2:00 PM 81 **Improving Gut Health And Mitigating Coccidiosis In Broiler Chickens Through *Lactobacillus Acidophilus* Derived Postbiotic Supplementation**  
Shiva Kumar Kurva\*<sup>1GS</sup> <sup>1</sup>icar-Central Avian Research Institute, Izatnagar, Uttar Pradesh, India
- 2:15 PM 82 **Use of a Hydrolyzed Yeast Product for Prevention of Necrotic Enteritis in Broilers**  
Charles L. Hofacre\*<sup>1</sup>, Yitong Guo<sup>3</sup>, Robin Yao<sup>3</sup>, Chad Risley<sup>3</sup>, Matthew K. Jones<sup>2</sup> <sup>1</sup>Southern Poultry Research Group, Inc., Watkinsville, Georgia, United States; <sup>2</sup>Southern Poultry Research Group, Watkinsville, Georgia, United States; <sup>3</sup>Planet Biosciences, Singapore, Singapore
- 2:30 PM 83 **Positive effects of dietary marine sulfated polysaccharides derived from macroalgae in broilers chickens during a necrotic enteritis challenge**  
Raquel T. Pereira\*<sup>1</sup>, Mariel Neves Tavares<sup>2</sup>, Candice E. Blue<sup>5</sup>, Maria Garcia<sup>3</sup>, Elise Nacer-Khodja<sup>1</sup>, MARIA A. RODRIGUEZ<sup>3</sup>, Rami A. Dalloul<sup>4</sup> <sup>1</sup>Olmix SA, Campinas, Sao Paulo, Brazil; <sup>2</sup>Omix SA, Brehan, France; <sup>3</sup>Olmix S.A, Brehan, Morbihan, France; <sup>4</sup>University of Georgia, Athens, Georgia, United States; <sup>5</sup>University of Georgia, Athens, Georgia, United States



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- 2:45 PM      84      **Dietary guanidinoacetic acid supplementation improves resilience of broilers during a multifactorial necrotic enteritis challenge**  
Lukas Bauer<sup>1</sup>, Cecile Gayraud\*<sup>1</sup>, Zeyang Li<sup>1</sup> <sup>1</sup>*Evonik Operations GmbH, Hanau-Wolfgang, Germany*
- 3:00 PM      85      **Engineered probiotic for inhibition of *Clostridium perfringens* induced NE in broiler chickens**  
Laura Enekegho<sup>1</sup>, Camila Schultz Marcolla<sup>2</sup>, Usha S. Sharma<sup>2</sup>, Douglas Korver<sup>2</sup>, Benjamin P. Willing<sup>2</sup>, David T. Stuart\*<sup>1</sup>  
<sup>1</sup>*University of Alberta, Edmonton, Alberta, Canada;* <sup>2</sup>*University of Alberta, Edmonton, Alberta, Canada*

## Informal Nutrition Symposium: Care and Feeding of Modern Broiler and Layer Breeders

*Moderator: Doug Korver, Alpine Poultry Nutrition, Inc.*

*John W. H. Bassett Theatre*

- 1:15 PM      1005S      **Symposium Introduction**  
Roselina Angel\*<sup>2</sup>, Doug Korver<sup>13</sup> <sup>1</sup>*Alpine Poultry Nutrition, Inc., Edmonton, Alberta, Canada;* <sup>2</sup>*University of Maryland, College Park, Maryland, United States;* <sup>3</sup>*University of Alberta, Edmonton, Alberta, Canada*
- 1:25 PM      1006S      **State of the Art in Layer Breeder Nutrition and Management**  
Xabier Arbe\*<sup>1</sup>, Emilio Scappaticcio<sup>1</sup> <sup>1</sup>*H&N International, Cuxhaven, Germany*
- 2:00 PM      1007S      **Optimizing nutrition and feeding strategies for female broiler breeders today**  
Shivaram K. Rao\*<sup>1</sup> <sup>1</sup>*Cobb Genetics, Atlanta, Georgia, United States*
- 2:30 PM      1008S      **New Feeding Strategies for Male Breeders**  
Justina Caldas\*<sup>1</sup> <sup>1</sup>*Aviagen, Huntsville, Alabama, United States*
- 3:00 PM           **Awards**
- 3:15 PM           **Break**
- 4:00 PM      1009S      **What precision feeding has revealed about changes to nutritional requirements for sexual maturation in broiler breeders**  
Martin Zuidhof\*<sup>1</sup> <sup>1</sup>*University of Alberta, Edmonton, Alberta, Canada*





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4:25 PM	1010S	<b>Impact nutrition and management on fertility</b> Rick A. van Emous* <sup>1</sup> <i>Wageningen Livestock Research, Wageningen, Netherlands</i>
4:55 PM	1011S	<b>Practical Considerations when Feeding Broiler Breeders</b> Benton Hudson* <sup>1</sup> <i>CSA Animal Nutrition, Hanceville, Alabama, United States</i>
5:25 PM		<b>Panel Discussion</b>

### Processing and Products Symposium: Poultry in Pet Food: Meeting Market Demands Though Science and Innovation

*Chair: Casey Owens, University of Arkansas*

#### 105 Constitution Hall

1:15 PM	1012S	<b>From Bird to Bowl: Translating Poultry Meat Ingredients into High-Performing Pet Food Products</b> Leah Lambrakis* <sup>1</sup> <i>Simmons Foods, Toronto, Ontario, Canada</i>
1:55 PM	1013S	<b>How pet food marketing trends impact food safety</b> Shannon Harrison* <sup>1</sup> <i>Simmons Foods, Siloam Springs, Arkansas, United States</i>
2:35 PM	1014S	<b>Quality of Poultry Meat Ingredients for Pet Food Processing: Impact on Final Product Stability and Acceptability</b> B. J. Bench* <sup>1</sup> <i>Tyson Foods, Inc., Springdale, Arkansas, United States</i>
3:15 PM		<b>Break</b>
4:00 PM		<b>Panel Discussion</b>

### Student Competition: Animal Well-Being and Behavior

*Moderator: Alexandra Harlander, University of Guelph*

#### 206 (E-F)

1:15 PM	86	<b>Quantification of the effect of dietary crude protein in broiler chickens on footpad dermatitis by meta-analysis</b> Deepak Subedi* <sup>1GS</sup> , William Lambert <sup>2</sup> , Milan Kandel <sup>1</sup> , Shemil Macelline <sup>1</sup> , Sonia Liu <sup>1</sup> <i>The University of Sydney, Sydney, New South Wales, Australia;</i> <sup>2</sup> <i>Mixscience, Bruz, France</i>
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| 1:30 PM | 87 | <p><b>Effects of dietary protein level and classical conditioning on stimulus preference in broiler chickens</b><br/>Sofía Herrera-Alcaíno*<sup>1GS</sup>, Jorge González-Pavez<sup>1</sup>, Paloma Cordero<sup>1</sup>, Daniela Luna<sup>1</sup>, Sergio A. Guzmán-Pino<sup>1</sup> <sup>1</sup><i>Universidad de Chile, Santiago, Las Condes, Chile</i></p>                                                                                                                                                                                                                                     |
| 1:45 PM | 88 | <p><b>Social Rank Influences Resource Use and Finishing Growth Performance in Broilers</b><br/>Carson D. Atwood*<sup>1GS</sup>, Janeen L. Salak-Johnson<sup>2</sup>, Meaghan M. Meyer<sup>1</sup> <sup>1</sup><i>Oklahoma State University, Stillwater, Oklahoma, United States</i>; <sup>2</sup><i>Michigan State University, East Lansing, Michigan, United States</i></p>                                                                                                                                                                                                                      |
| 2:00 PM | 89 | <p><b>Fun and fear: Effect of using platform perches on stimulated play and neophobia in broiler chickens</b><br/>Chloe Phelps*<sup>1GS</sup>, Leonie Jacobs<sup>2</sup> <sup>1</sup><i>Virginia Tech, Blacksburg, Virginia, United States</i>; <sup>2</sup><i>Virginia Tech, Blacksburg, Virginia, United States</i></p>                                                                                                                                                                                                                                                                         |
| 2:15 PM | 90 | <p><b>Growth performance and preference of broiler chickens under two light treatments</b><br/>Karen M. Rivera*<sup>1GS</sup>, Allison D. Weaver<sup>1</sup>, Rosie Whittle<sup>2</sup>, Rovin Sanjur Caballero<sup>3</sup>, Shawna Weimer<sup>4</sup> <sup>1</sup><i>University of Arkansas, Fayetteville, Arkansas, United States</i>; <sup>2</sup><i>University of Arkansas, Fayetteville, Arkansas, United States</i>; <sup>3</sup><i>University of Arkansas, Fayetteville, Arkansas, United States</i>; <sup>4</sup><i>University of Arkansas, Fayetteville, Arkansas, United States</i></p> |
| 2:30 PM | 91 | <p><b>PoultryLeX-Net: Dual-stream transformer architecture for large-scale poultry sentiment analysis</b><br/>Stephen Afrifa*<sup>1GS</sup>, Biswash Khatiwada<sup>1</sup>, Kapalik Khanal<sup>1</sup>, Sanjay Shah<sup>1</sup>, Lingjuan W. Li<sup>1</sup>, Ramesh B. Bist<sup>1</sup> <sup>1</sup><i>North Carolina State University, Raleigh, North Carolina, United States</i></p>                                                                                                                                                                                                            |
| 2:45 PM | 92 | <p><b>Phenotype-based discrimination in laying hen pullets assessed through feather pecking and other non-aggressive interactions</b><br/>Amaia Hormaetxe*<sup>1GS</sup>, Aitana Eizaguirre<sup>1</sup>, Xavier Averós<sup>1</sup>, Linda Keeling<sup>2</sup>, Ruth Newberry<sup>3</sup>, Inma Estevez<sup>14</sup> <sup>1</sup><i>Neiker, Arkaute, Spain</i>; <sup>2</sup><i>SLU, Uppsala, Sweden</i>; <sup>3</sup><i>NMBU, As, Norway</i>; <sup>4</sup><i>IKERBASQUE, Bilbao, Spain</i></p>                                                                                                     |



## FRIDAY, JULY 10

- 3:00 PM 93 Limited evidence for locomotor imitation in pullets using a ramp vs. jump two-action procedure**  
 Kathryn Walsh\*<sup>12GS</sup>, Lea Nicklas<sup>32</sup>, Bret W. Tobalske<sup>4</sup>, Eolia Planchon<sup>1</sup>, Nienke van Staaveren<sup>1</sup>, Donald Powers<sup>7</sup>, Tina Widowski<sup>5</sup>, Bettina Willie<sup>8</sup>, Alexandra Harlander<sup>6</sup> <sup>1</sup>University of Guelph, Guelph, Ontario, Canada; <sup>2</sup>University of Guelph, Guelph, Ontario, Canada; <sup>3</sup>University of Guelph, Guelph, Ontario, Canada; <sup>4</sup>University of Montana, Missoula, Montana, United States; <sup>5</sup>University of Guelph, Guelph, Ontario, Canada; <sup>6</sup>University of Guelph, Guelph, Ontario, Canada; <sup>7</sup>George Fox University, Newberg, Oregon, United States; <sup>8</sup>Utah State University, Logan, Utah, United States
- 3:15 PM 93.5 Break**
- 4:00 PM 94 Building maneuvering skills of laying hens through training – no effect on daily energy expenditure**  
 Taylor Burwell\*<sup>4GS</sup>, Donald Powers<sup>1</sup>, Renee Garant<sup>4</sup>, Bettina Willie<sup>2</sup>, Bret W. Tobalske<sup>3</sup>, Alexandra Harlander<sup>4</sup> <sup>1</sup>George Fox University, Newberg, Oregon, United States; <sup>2</sup>Utah State University, Logan, Utah, United States; <sup>3</sup>University of Montana, Missoula, Montana, United States; <sup>4</sup>University of Guelph, Guelph, Ontario, Canada
- 4:15 PM 95 Add It, Take It Away: The Consequences of Enrichment Change in Pullets and Hens on Feather Cover and Mortality**  
 Jasmin Schiestel\*<sup>14GS</sup>, Nienke van Staaveren<sup>1</sup>, Anna M. Edwards<sup>1</sup>, Lea Nicklas<sup>24</sup>, Mike Petrik<sup>1</sup>, Tina Widowski<sup>34</sup>, Alexandra Harlander<sup>4</sup> <sup>1</sup>University of Guelph, Mildmay, Ontario, Canada; <sup>2</sup>University of Guelph, Guelph, Ontario, Canada; <sup>3</sup>University of Guelph, Guelph, Ontario, Canada; <sup>4</sup>University of Guelph, Guelph, Ontario, Canada
- 4:30 PM 96 Does location matter? The impact of pecking block placement on feather condition in laying hens**  
 Emma A. Simmonds\*<sup>12GS</sup>, Lea Nicklas<sup>12</sup>, Nienke van Staaveren<sup>1</sup>, Tina Widowski<sup>12</sup>, Alexandra Harlander<sup>12</sup> <sup>1</sup>University of Guelph, Guelph, Ontario, Canada; <sup>2</sup>University of Guelph, Guelph, Ontario, Canada
- 4:45 PM 97 Turkey behavioral activity levels are influenced by age and walking ability, and minimally by environmental enrichment**  
 Gideon S. Ajibola\*<sup>1GS</sup>, Nathan A. Griffith<sup>1</sup>, Luiz F. Brito<sup>1</sup>, Prafulla Regmi<sup>2</sup>, Marisa A. Erasmus<sup>1</sup> <sup>1</sup>Purdue university, West Lafayette, Indiana, United States; <sup>2</sup>University of Georgia, Athens, Georgia, United States


**FRIDAY, JULY 10**
**Student Competition: Microbiology and Food Safety II**
*Moderator: Kuan Ling Liu, USDA*
**202 (A-D)**

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| 1:15 PM | 98  | <p><b>Survivability of <i>Campylobacter jejuni</i> and <i>Campylobacter coli</i> in broiler litter</b></p> <p>Ruby Paudel*<sup>1GS</sup>, Farazi Rahman<sup>1</sup>, Shijinaraj Manjankattil Rajan<sup>1</sup>, Dianna Bourassa<sup>1</sup>, Sabin Poudel<sup>1</sup> <sup>1</sup><i>Auburn University, Auburn, Alabama, United States</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 1:30 PM | 99  | <p><b>Virulence Determinants and Antimicrobial Resistance in Avian Pathogenic <i>Escherichia coli</i> Isolated from Poultry in Malaysia</b></p> <p>Faisal Danish*<sup>12GS</sup>, Nurul Izzati Muhamad Hasuri<sup>3</sup>, Nur Aimi Syifa Huzairi<sup>3</sup>, Zunita Zakeria<sup>13</sup>, Jalila Abu<sup>3</sup> <sup>1</sup><i>Universiti Putra Malaysia, Pol- E Alam, Malaysia</i>; <sup>2</sup><i>Afghanistan National Agricultural Sciences and Technology University, Kandahar, Kandahar, Afghanistan</i>; <sup>3</sup><i>Universiti Putra Malaysia, Serdang, Selangor, Malaysia</i></p>                                                                                                                                                                                                                   |
| 1:45 PM | 100 | <p><b>Pre-harvest heat stress: disruption of microbial ecology and subsequent shelf-life of raw poultry products</b></p> <p>Mack P. Myer*<sup>1GS</sup>, Taylor Fearing<sup>2</sup>, Elizabeth Greene<sup>3</sup>, Sami Dridi<sup>3</sup>, Dana K. Dittoe<sup>4</sup> <sup>1</sup><i>University of Wyoming, Laramie, Wyoming, United States</i>; <sup>2</sup><i>Wyoming Public Health Laboratory, Cheyenne, Wyoming, United States</i>; <sup>3</sup><i>University of Arkansas, Fayetteville, Arkansas, United States</i>; <sup>4</sup><i>University of Wyoming, Laramie, Wyoming, United States</i></p>                                                                                                                                                                                                           |
| 2:00 PM | 101 | <p><b>The Effect of a Live-modified <i>Salmonella</i> Typhimurium Vaccine on the Performance Parameters of Broilers Challenged with <i>Salmonella</i> Enteritidis</b></p> <p>Arijmand Fatima*<sup>1GS</sup>, Jinquan Wang<sup>2</sup>, Sabin Poudel<sup>3</sup>, Samuel Rochell<sup>4</sup>, Erasmo A. Flores Granados<sup>5</sup>, Zahidul H. Tushar<sup>1</sup>, Rabin Raut<sup>1</sup>, Rishav Kumar<sup>1</sup>, Dianna Bourassa<sup>1</sup> <sup>1</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>2</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>3</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>4</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>5</sup><i>Auburn University, Auburn, Alabama, United States</i></p> |
| 2:15 PM | 102 | <p><b><i>Salmonella</i> Typhimurium persistence on antimicrobial-infused polyurethane surfaces</b></p> <p>Ansel Steele*<sup>1GS</sup>, Matthew A. Bailey<sup>2</sup>, Hanyi Shi<sup>1</sup>, Jinquan Wang<sup>3</sup>, Dianna Bourassa<sup>1</sup> <sup>1</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>2</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>3</sup><i>Auburn University, Auburn, Alabama, United States</i></p>                                                                                                                                                                                                                                                                                                                                           |


**FRIDAY, JULY 10**
**Student Competition: Physiology and Reproduction II**

Moderator: Kuan Ling Liu, USDA

205 (A-D)

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| 1:15 PM | 103 | <p><b>Corticosterone increases but returns to baseline in both sexes during chronic heat stress, however met-enkephalin levels increased until recovery in Pekin ducks.</b><br/>         Nina Wilson*<sup>1GS</sup>, Jenna M. Schober<sup>2</sup>, Gregory S. Fraley<sup>3</sup> <sup>1</sup><i>Purdue University, Knox, Indiana, United States</i>; <sup>2</sup><i>Purdue University, Frankfort, Indiana, United States</i>; <sup>3</sup><i>Purdue University, West Lafayette, Indiana, United States</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 1:30 PM | 104 | <p><b>Differences in testicular morphology associated with sperm mobility phenotypes in broiler breeder roosters</b><br/>         Arianna Bond*<sup>1GS</sup>, Tom Porter<sup>1</sup>, Paige D. Meisner<sup>1</sup>, Ricardo G. Sierra Arroyo<sup>1</sup>, Kuan Ling Liu<sup>3</sup>, Diane Hildenberger<sup>3</sup>, Isaac Harford<sup>2</sup>, Kristen Diehl<sup>3</sup> <sup>1</sup><i>University of Maryland, College Park, Maryland, United States</i>; <sup>2</sup><i>Cobb-Vantress Inc., Siloam Springs, Arkansas, United States</i>; <sup>3</sup><i>USDA-ARS, Beltsville, Maryland, United States</i></p>                                                                                                                                                                                                                                                                                                                                                                |
| 1:45 PM | 105 | <p><b>Embryos in motion: the influence of strain and sex on prenatal motility in commercial layer chickens</b><br/>         Renee Garant*<sup>12GS</sup>, Bret W. Tobalske<sup>3</sup>, Nienke van Staaveren<sup>1</sup>, Donald Powers<sup>4</sup>, Tina Widowski<sup>5</sup>, Bettina Willie<sup>67</sup>, Alexandra Harlander<sup>8</sup> <sup>1</sup><i>University of Guelph, Guelph, Ontario, Canada</i>; <sup>2</sup><i>Campbell Centre for the Study of Animal Welfare, Guelph, Ontario, Canada</i>; <sup>3</sup><i>University of Montana, Missoula, Montana, United States</i>; <sup>4</sup><i>George Fox University, Newberg, Oregon, United States</i>; <sup>5</sup><i>University of Guelph, Guelph, Ontario, Canada</i>; <sup>6</sup><i>Utah State University, Logan, Utah, United States</i>; <sup>7</sup><i>Shriners Hospital for Children-Canada, Montreal, Quebec, Canada</i>; <sup>8</sup><i>University of Guelph, Guelph, Ontario, Canada</i></p>               |
| 2:00 PM | 106 | <p><b>Embryonic Movement Influences Postnatal Bone Mineral Density and Strength in Chickens</b><br/>         Setareh Khorshidparast*<sup>12GS</sup>, Renee Garant<sup>3</sup>, Anthony Helou<sup>1</sup>, Tamara Droual<sup>1</sup>, Karim Elsayed<sup>1</sup>, Maya Arab Makansi<sup>1</sup>, Tina Widowski<sup>3</sup>, Bret W. Tobalske<sup>4</sup>, Claudie Berger<sup>5</sup>, Alexandra Harlander<sup>6</sup>, Bettina Willie<sup>127</sup> <sup>1</sup><i>Shriners Hospitals for Children-Canada, Research Centre, Montreal, Quebec, Canada</i>; <sup>2</sup><i>McGill University, Montreal, Quebec, Canada</i>; <sup>3</sup><i>University of Guelph, Guelph, Ontario, Canada</i>; <sup>4</sup><i>University of Montana, Missoula, Montana, United States</i>; <sup>5</sup><i>McGill University, Montreal, Quebec, Canada</i>; <sup>6</sup><i>University of Guelph, Guelph, Ontario, Canada</i>; <sup>7</sup><i>Utah State University, Logan, Utah, United States</i></p> |



## FRIDAY, JULY 10

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| 2:15 PM | 107   | <p><b>Gene expression associated with the hypothalamic-pituitary-gonadal axis in response to synchronizing body weight and photostimulation in cage-free pullets</b></p> <p>Olivia McGuire*<sup>2GS</sup>, Clara J. Ziezold<sup>1</sup>, Ana K. Rentsch<sup>1</sup>, Grégory Y. Bédécarrats<sup>1</sup>, Charlene Hanlon<sup>2</sup> <sup>1</sup><i>University of Guelph, Guelph, Ontario, Canada;</i> <sup>2</sup><i>Auburn University, Auburn, Alabama, United States</i></p>                                                                                                                                                                                 |
| 2:30 PM | 108   | <p><b>Effects of genetic selection on thyrotropic axis gene expression in yolk sac and somatic tissues during broiler embryogenesis</b></p> <p>Grant G. Bennett*<sup>1GS</sup>, Jordan Castle<sup>1</sup>, Kloie Varnadoe<sup>1</sup>, Laura E. Ellestad<sup>1</sup> <sup>1</sup><i>University of Georgia, Athens, Georgia, United States</i></p>                                                                                                                                                                                                                                                                                                               |
| 2:45 PM | 109   | <p><b>Antibiotic growth promoters restore performance, acid-base balance, and kidney function during heat stress in modern broilers</b></p> <p>Colin A. Barcelo*<sup>1GS</sup>, Virginia Jacobs<sup>1</sup>, Anneliese Amukamara<sup>1</sup>, Laura E. Ellestad<sup>2</sup> <sup>1</sup><i>University of Georgia, Athens, Georgia, United States;</i> <sup>2</sup><i>University of Georgia, Athens, Georgia, United States</i></p>                                                                                                                                                                                                                              |
| 3:00 PM | 110   | <p><b>Effects of fasting and semi-purified diets on hypothalamic mRNA expression in broiler chicks</b></p> <p>Michaela A. Riedel*<sup>1GS</sup>, Parama Bhattacharjee<sup>1</sup>, Nishanth E. Sunny<sup>1</sup>, Tom Porter<sup>1</sup> <sup>1</sup><i>University of Maryland, College Park, Hyattsville, Maryland, United States</i></p>                                                                                                                                                                                                                                                                                                                      |
| 3:15 PM | 110.5 | <b>Break</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 4:00 PM | 111   | <p><b>Pituitary thyrotropin responsiveness to thyrotropin-releasing hormone differs between low and high egg producing turkey hens</b></p> <p>Ricardo G. Sierra Arroyo*<sup>1GS</sup>, Tom Porter<sup>1</sup>, Kristen Diehl<sup>2</sup> <sup>1</sup><i>University of Maryland, College Park, Maryland, United States;</i> <sup>2</sup><i>USDA-ARS, Beltsville, Maryland, United States</i></p>                                                                                                                                                                                                                                                                 |
| 4:15 PM | 112   | <p><b>Oviposition time on the early production stage of broiler breeder hens fed different feeding regimens</b></p> <p>Nicole Dundur Serrano*<sup>2GS</sup>, Jeremiah Davis<sup>3</sup>, Lauren Sroda<sup>3</sup>, Kristen Diehl<sup>1</sup>, Brenda Flack<sup>4</sup>, Madison Berger<sup>2</sup>, Charlene Hanlon<sup>2</sup> <sup>1</sup><i>USDA-ARS, Beltsville, Maryland, United States;</i> <sup>2</sup><i>Auburn University, Auburn, Alabama, United States;</i> <sup>3</sup><i>National Poultry Technology Center, Auburn University, Auburn, Alabama, United States;</i> <sup>4</sup><i>Cobb-Vantress, Siloam Springs, Arkansas, United States</i></p> |



## FRIDAY, JULY 10



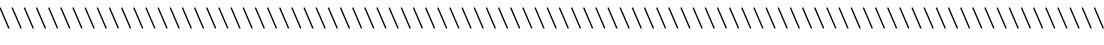
- 4:30 PM            113            **Interactive Effects of Flock Age, Oviposition, and Eggshell Translucency on Egg Quality and Hatchability**  
 Leticia Orellana\*<sup>1GS</sup>, Matthew Hughes<sup>2</sup>, Chrysta N. Beck<sup>1</sup>, Ken Macklin<sup>1</sup> <sup>1</sup>*Mississippi State University, Starkville, Mississippi, United States;* <sup>2</sup>*Mississippi State University, Mississippi State, Mississippi, United States*
- 4:45 PM            114            **Use of novel methodology to simulate external and internal keel tip fractures and assess keel tip strength**  
 Brittney J. Emmert\*<sup>1GS</sup>, Charles J. MacWilliams<sup>2</sup>, Sara Cloft<sup>1</sup>, Thomas H. Siegmund<sup>2</sup>, Darrin M. Karcher<sup>1</sup> <sup>1</sup>*Purdue University, West Lafayette, Indiana, United States;* <sup>2</sup>*Purdue University, West Lafayette, Indiana, United States*
- 5:00 PM            115            **Identification of cells responsible for polyamine synthesis in the kidney of broiler chickens**  
 Yuma Shiomi\*<sup>1GS</sup>, Takahiro Shibata<sup>1</sup>, Atsushi Murai<sup>1</sup>, Kyohei Furukawa<sup>1</sup> <sup>1</sup>*Nagoya University, Nagoya, Japan*

### Student Competition: Processing and Products

*Moderator: Hudson Thames, Mississippi State University*

#### 203 (B-D)

- 1:15 PM            116            **Analyzing Egg Yolk Color Scores: Statistical and Colorimetric Evidence from the DSM YolkFan™**  
 Jared Trask\*<sup>1GS</sup>, Sara Cloft<sup>2</sup>, Chenchen Lu<sup>3</sup>, Bruce Craig<sup>3</sup>, Darrin M. Karcher<sup>4</sup> <sup>1</sup>*Purdue University, West Lafayette, Indiana, United States;* <sup>2</sup>*Purdue University, West Lafayette, Indiana, United States;* <sup>3</sup>*Purdue University, West Lafayette, Indiana, United States;* <sup>4</sup>*Purdue University, West Lafayette, Indiana, United States*
- 1:30 PM            117            **Exterior Eggshell Characteristics: Rhode Island Red and Black Australorp vs. Single Comb White Leghorns**  
 Emma F. Mullins\*<sup>1UG</sup>, Ava L. Mullins<sup>1</sup>, Brigid McCrea<sup>1</sup> <sup>1</sup>*Alabama Cooperative Extension System, Auburn, Alabama, United States*
- 1:45 PM            118            **Interior Egg Quality of Rhode Island Red and Black Australorp compared to Commercial Single Comb White Leghorn**  
 Ava L. Mullins\*<sup>1UG</sup>, Emma F. Mullins<sup>1</sup>, Brigid McCrea<sup>1</sup> <sup>1</sup>*Alabama Cooperative Extension System, Auburn, Alabama, United States*
- 2:00 PM            119            **Functionality of Rhode Island Red and Black Australorp Eggs Compared to Single Comb White Leghorn Eggs**  
 Elizabeth F. Knight\*<sup>1UG</sup>, Alyssa C. Rios<sup>1</sup>, Brigid McCrea<sup>1</sup> <sup>1</sup>*Alabama Cooperative Extension System, Auburn, Alabama, United States*





## FRIDAY, JULY 10

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- 2:15 PM 120 **Angel Food Cake, Custard, and Mayonnaise Performance with Rhode Island Red and Black Australorp Eggs vs. Single Comb White Leghorn Eggs**  
Alyssa C. Rios\*<sup>1UG</sup>, Elizabeth F. Knight<sup>1</sup>, Brigid McCrea<sup>1</sup> *Alabama Cooperative Extension System, Auburn, Alabama, United States*
- 2:30 PM 121 **Untargeted Metabolomics to Understand the Impact of Controlled Atmosphere Stunning and Electrical Stunning on Metabolite Profiles of Early Postmortem Breast Fillet**  
Rishav Kumar\*<sup>1GS</sup>, Melissa Boersma<sup>2</sup>, Sunoh Che<sup>3</sup>, Zahidul H. Tushar<sup>1</sup>, Rabin Raut<sup>1</sup>, Dianna Bourassa<sup>1</sup> *<sup>1</sup>Auburn University, Auburn, Alabama, United States; <sup>2</sup>Auburn University, Auburn, Alabama, United States; <sup>3</sup>University of Maryland, College Park, Maryland, United States*
- 2:45 PM 122 **Effects of Endpoint Cooking Temperature on Broiler Breast Fillet Shear Energy and Yields**  
Jeremy Summers\*<sup>1GS</sup>, Sarah E. Johnson<sup>2</sup>, Casey M. Owens<sup>3</sup> *<sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>3</sup>University of Arkansas, Fayetteville, Arkansas, United States*
- 3:00 PM 123 **Evaluation of the Prevalence of Wing Damage of Broiler Carcasses in a Commercial Processing Plant**  
Marissa Askew\*<sup>1GS</sup>, Kassim Sulleyman<sup>1</sup>, Niek Milder<sup>2</sup>, Dianna Bourassa<sup>1</sup> *<sup>1</sup>Auburn University, Auburn, Alabama, United States; <sup>2</sup>JBT Marel, Boxmeer, Netherlands*
- 3:15 PM **Break**
- 4:00 PM 124 **Wing Abduction Angle and Woody Breast Development in Broilers Fed Diets Differing in Nutrient Density and Probiotic Supplementation**  
Sarah E. Johnson\*<sup>1GS</sup>, Rosie Whittle<sup>2</sup>, Jeremy Summers<sup>3</sup>, Joaquin J. Esquivel Vergara<sup>4</sup>, Karen M. Rivera<sup>5</sup>, Allison D. Weaver<sup>6</sup>, Benjamin Parsons<sup>7</sup>, Shawna Weimer<sup>8</sup>, Casey M. Owens<sup>9</sup> *<sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>3</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>4</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>5</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>6</sup>University of Arkansas, Fayetteville, Fayetteville, Arkansas, United States; <sup>7</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>8</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>9</sup>University of Arkansas, Fayetteville, Arkansas, United States*



## FRIDAY, JULY 10

- 4:15 PM 125 Improving Functionality of Woody Breast-Affected Broiler Meat with Proteolytic Enzyme Marination: Implications for Yield**  
 Krystell Charles\*<sup>1GS</sup>, Kelley G. Wamsley<sup>2</sup>, Amanda bushong<sup>2</sup>, Casey M. Owens<sup>3</sup>, Hudson Thames<sup>4</sup> <sup>1</sup>Mississippi State University, Starkville, Mississippi, United States; <sup>2</sup>Mississippi State University, Mississippi State, Mississippi, United States; <sup>3</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>4</sup>Mississippi State University, Starkville, Mississippi, United States
- 4:30 PM 126 Effect of poultry DAF skimmings' composition on hydrothermal carbonization yield and resource recovery**  
 Zahra Rangoonwala\*<sup>2UG</sup>, Jie Xu<sup>2</sup>, Austen R. Monteith<sup>2</sup>, William Hall<sup>2</sup>, Aklilu Giorges<sup>2</sup>, Chris Heist<sup>21</sup>, Jordan Ash<sup>21</sup> <sup>1</sup>Georgia Tech Research Institute, Atlanta, Georgia, United States; <sup>2</sup>Georgia Tech Research Institute, Atlanta, Georgia, United States
- 4:45 PM 127 Effects of Sex, Defeathering Intensity, and Peracetic Acid Exposure on Broiler Meat Quality**  
 Zahidul H. Tushar\*<sup>1GS</sup>, Rishav Kumar<sup>1</sup>, Farazi Rahman<sup>1</sup>, Shijinaraj Manjankattil Rajan<sup>2</sup>, Jinquan Wang<sup>3</sup>, Dianna Bourassa<sup>1</sup> <sup>1</sup>Auburn University, Auburn, Alabama, United States; <sup>2</sup>Auburn University, Auburn, Alabama, United States; <sup>3</sup>Auburn University, Auburn, Alabama, United States
- 5:00 PM 128 Shelf-life dynamics of poultry parts following PAA and eBeam treatments during refrigerated storage**  
 Seth O. Adesope\*<sup>1GS</sup>, Eniola Betiku<sup>1</sup>, Casey M. Owens<sup>1</sup>, Palmy Jesudhasan<sup>2</sup>, Suresh Pillai<sup>3</sup>, Tomi Obe<sup>14</sup> <sup>1</sup>University of Arkansas System Division of Agriculture, Fayetteville, Arkansas, United States; <sup>2</sup>USDA-ARS, Fayetteville, Arkansas, United States; <sup>3</sup>Texas A&M University, Texas, Texas, United States; <sup>4</sup>Center for Food Safety, University of Arkansas System Division of Agriculture, Fayetteville, Arkansas, United States

## Student Competition: Metabolism and Nutrition - General Nutrition II

Moderator: Anna Rogiewicz, University of Manitoba

201 (A-F)

- 1:45 PM 497 Influence of particle size, macromineral composition and physical properties of limestone on its solubility and acid-binding capacity**  
 DIEGO P. PEREZ\*<sup>12GS</sup>, Xaviere Rousseau<sup>1</sup>, Carrie L. Walk<sup>1</sup>, Guillermo Talegón<sup>2</sup>, Gonzalo González Mateos<sup>2</sup> <sup>1</sup>AB Vista, Marlborough, United Kingdom; <sup>2</sup>Universidad Politécnica de Madrid, Madrid, Spain



## FRIDAY, JULY 10

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| 2:00 PM | 129 | <p><b>Validation of a novel methodology to measure the internal particle size of pelleted feed and the degree of grinding during pelleting</b><br/>         Urias Castillo*<sup>1GS</sup>, Wilmer J. Pacheco<sup>2</sup> <sup>1</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>2</sup><i>Auburn University, Auburn, Alabama, United States</i></p>                                                                                                                                                                                                                                                                                       |
| 2:15 PM | 130 | <p><b>Targeted Bacteroidales inoculation enhances early-life gut colonization in broilers</b><br/>         Usha Sivakumar Sharma*<sup>1GS</sup>, Camila Schultz Marcolla<sup>1</sup>, Jaime Wolfe<sup>1</sup>, Benjamin P. Willing<sup>1</sup> <sup>1</sup><i>Faculty of Agriculture, Life and Environmental Sciences, University of Alberta, Edmonton, Alberta, Canada</i></p>                                                                                                                                                                                                                                                                               |
| 2:30 PM | 131 | <p><b>Effect of cyclic heat exposure on the expression of genes related to jejunal tight junction proteins and cecal microorganisms of broilers fed palm kernel meal</b><br/>         Ahmed MIJIYAWA<sup>12</sup>, Elham Ghashghaei<sup>1</sup>, Lijing Sun<sup>1</sup>, Huimin Wang<sup>1</sup>, Uchechukwu E. Obianwuna<sup>3</sup>, Wéré PITALA<sup>2</sup>, Hongchao Jiao<sup>1</sup>, Dr. H. Lin*<sup>1GS</sup> <sup>1</sup><i>College of Animal Science and Technology, Tai'an, China</i>; <sup>2</sup><i>Regional Center of Excellence for Avian Sciences, University of Lome, Lome, Togo, Lome, Togo</i>; <sup>3</sup><i>CAAS, Beijing, China</i></p> |
| 2:45 PM | 132 | <p><b>Effect of apparent metabolizable energy, conditioning temperature, and retention time on crumble quality and pellet durability index of broiler diets</b><br/>         Jose I. Vargas*<sup>1GS</sup>, Maria J. Brizuela<sup>1</sup>, Isabella Dias<sup>1</sup>, Urias Castillo<sup>1</sup>, Eva G. Guzman Guzman<sup>1</sup>, Natawadee Pinyosnit<sup>1</sup>, Roberta Romero<sup>1</sup>, Gabriel Peron<sup>1</sup>, Lillian Brito Lins<sup>1</sup>, Wilmer J. Pacheco<sup>1</sup> <sup>1</sup><i>Auburn University, Auburn, Alabama, United States</i></p>                                                                                            |
| 3:00 PM | 133 | <p><b>potency of processed soy sauce meal as an alternative protein source for laying hens</b><br/>         Fatimah Fatimah*<sup>1GS</sup>, titik ekowati<sup>1</sup>, vitus db yunianto<sup>1</sup>, hasliza Abu Hasim<sup>2</sup> <sup>1</sup><i>Diponegoro University, Indonesia, Central Java, Indonesia</i>; <sup>2</sup><i>University Putra Malaysia, Serdang, Selangor, Malaysia</i></p>                                                                                                                                                                                                                                                               |
| 3:15 PM |     | <b>Break</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 4:00 PM | 134 | <p><b>Evaluating the impact of palm oil Inclusion on growth performance, meat quality, and lipid deposition in turkeys</b><br/>         Nicolas Mejia Abaunza*<sup>1GS</sup>, Allison Jun T. Kawaoku<sup>1</sup>, Catherine Fudge<sup>1</sup>, Muhammad Ali<sup>1</sup>, Federico Etcheverry<sup>1</sup>, Samuel Ogundipe<sup>2</sup>, Adam Davis<sup>1</sup>, Ronald Pegg<sup>2</sup>, Chongxiao Chen<sup>1</sup> <sup>1</sup><i>University of Georgia, Athens, Georgia, United States</i>; <sup>2</sup><i>University of Georgia, Athens, Georgia, United States</i></p>                                                                                     |



## FRIDAY, JULY 10

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| 4:15 PM | 135 | <p><b>The effects of dietary crude protein level and poultry by-product meal or crystalline glycine inclusion on the growth performance of broilers challenged with necrotic enteritis</b><br/>         Nelsa Beckman*<sup>1GS</sup>, Matheus Rosa<sup>1</sup>, Ruediger Hauck<sup>1</sup>, William A. Dozier<sup>2</sup>, Kelsy Robinson<sup>3</sup>, Samuel Rochell<sup>1</sup> <sup>1</sup><i>Auburn University, Auburn, Alabama, United States</i>; <sup>2</sup><i>Auburn University, Auburn University, Alabama, United States</i>; <sup>3</sup><i>USDA-ARS, Starkville, Mississippi, United States</i></p> |
| 4:30 PM | 136 | <p><b>Effects of dietary palm oil inclusion on performance metrics and egg quality in laying hens</b><br/>         Samantha Dong*<sup>1UG</sup>, Allison Jun T. Kawaoku<sup>1</sup>, Nicolas Mejia-Abauza<sup>1</sup>, Catherine Fudge<sup>1</sup>, Muhammad Ali<sup>1</sup>, Federico Etcheverry<sup>1</sup>, Adam Davis<sup>1</sup>, Samuel Ogundipe<sup>2</sup>, Ronald Pegg<sup>2</sup>, Chongxiao Chen<sup>1</sup> <sup>1</sup><i>University of Georgia, Athens, Georgia, United States</i>; <sup>2</sup><i>University of Georgia, Athens, Georgia, United States</i></p>                                   |
| 4:45 PM | 137 | <p><b>Effects of low-protein diets and nutrient conditioning on productive performance in broiler chickens</b><br/>         Sofia Herrera-Alcaíno*<sup>1GS</sup>, Jorge González-Pavez<sup>1</sup>, Paloma Cordero<sup>1</sup>, Daniela Luna<sup>1</sup>, Sergio A. Guzmán-Pino<sup>1</sup> <sup>1</sup><i>Universidad de Chile, Santiago, Las Condes, Chile</i></p>                                                                                                                                                                                                                                             |



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# Saturday, July 11

SCIENTIFIC SESSIONS

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# SATURDAY, JULY 11

## Physiology and Reproduction

Moderator: Giri Athrey, Texas A&M University & Kristen Diehl, USDA-ARS

206 (A-D)

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|---------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:00 AM | 138 | <p><b>Phenotyping Male Fertility Traits for Improving Broiler Breeder Fertility</b><br/> Giri Athrey*<sup>1</sup>, Kolton L. Witherspoon<sup>2</sup>, Triumph Okuku<sup>3</sup> <sup>1</sup>Texas A&amp;M University, College Station, Texas, United States; <sup>2</sup>Texas A&amp;M University, College Station, Texas, United States; <sup>3</sup>Texas A&amp;M University, College Station, Texas, United States</p>                                                                                                                                                                                                |
| 8:30 AM | 139 | <p><b>Strain-Specific Variations in Oxidative stress and Immune Responses of Meat-Type Chickens Exposed to Cyclical Heat Stress</b><br/> GAUTHAM KOLLURI*<sup>1</sup>, Prashanth Bhutekhar<sup>1</sup>, jagbir singh tyagi<sup>1</sup>, MATIN ANSARI<sup>1</sup>, AVNI SACHAN<sup>1</sup>, Vaishali Gupta<sup>2</sup> <sup>1</sup>ICAR-CENTRAL AVIAN RESEARCH INSTITUTE, Govt. of INDIA, Bareilly, UTTAR PRADESH, India; <sup>2</sup>Gyeongsang National University, Jinju-si, Korea (the Republic of)</p>                                                                                                               |
| 8:45 AM | 140 | <p><b>Hidden in plain sight: differences in color vision and visual acuity of the Pekin Duck compared to its wild progenitor the Mallard duck (<i>Anas platyrhynchos</i>).</b><br/> Gregory S. Fraley*<sup>1</sup>, Patrice Baumhardt<sup>2</sup>, Esteban Fernandez-Juricic<sup>2</sup> <sup>1</sup>Purdue University, West Lafayette, Indiana, United States; <sup>2</sup>Purdue University, West Lafayette, Indiana, United States</p>                                                                                                                                                                                |
| 9:00 AM | 141 | <p><b>Did you see that? Impact of green, red or blue LED and white fluorescent vs incandescent lights on Pekin duck visualization of their environment and ducks actively avoid blue lights.</b><br/> Gregory S. Fraley*<sup>1</sup>, Patrice Baumhardt<sup>2</sup>, Alice S. Kim<sup>1</sup>, Esteban Fernandez-Juricic<sup>2</sup> <sup>1</sup>Purdue University, West Lafayette, Indiana, United States; <sup>2</sup>Purdue University, West Lafayette, Indiana, United States</p>                                                                                                                                    |
| 9:15 AM | 142 | <p><b>Significance of sex and season for the long-term effects of embryonic temperature training in broiler chickens</b><br/> Barbara Tzschentke*<sup>1</sup>, Vanessa Lux<sup>2,3</sup>, Rebecca Lindewald<sup>4</sup>, Nicole Ahlig<sup>1</sup> <sup>1</sup>Institute for Agricultural and Urban Ecological Projects (IASP) at Humboldt-Universität zu Berlin, Berlin, Germany; <sup>2</sup>Ruhr University Bochum, Bochum, Germany; <sup>3</sup>GESIS Leibniz Institute for the Social Science, Mannheim, Germany; <sup>4</sup>University of Veterinary Medicine Hannover, Foundation Hannover, Hannover, Germany</p> |

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## SATURDAY, JULY 11

- SAT**
- 9:30 AM 143 **Mechanism of glutamate accumulation in chicken eggs**  
 Kyohei Furukawa\*<sup>1</sup>, Mitsuko Enomoto<sup>1</sup>, Atsushi Murai<sup>1</sup> <sup>1</sup>Nagoya University, Nagoya, Japan
- 9:45 AM 144 **New insights into keel bone development: Keel tip integrity is unaffected by age at first egg in LSL-Lite pullets**  
 Ana K. Rentsch\*<sup>31</sup>, Charlene Hanlon<sup>2</sup>, Grégory Y. Bédécarrats<sup>3</sup>  
<sup>1</sup>University of Guelph, Guelph, Ontario, Canada; <sup>2</sup>Auburn University, Auburn, Alabama, United States; <sup>3</sup>University of Guelph, Guelph, Ontario, Canada
- 10:00 AM **Break**
- 10:45 AM 145 **Non-Destructive Assessment of Broiler Hatching Eggs Fertility Prior Incubation Via VOCs Profiling**  
 Xiaojuan (Judy) Song\*<sup>1</sup>, Christopher A. Heist<sup>1</sup>, Olga Kemenova<sup>1</sup>, Ashley Gatewood<sup>2</sup>, Charles L. Hofacre<sup>2</sup>, Brian Fairchild<sup>4</sup>, Doug Britton<sup>3</sup> <sup>1</sup>Georgia Tech Research Institute, Atlanta, Georgia, United States; <sup>2</sup>Southern Poultry Research Group, Inc., Watkinsville, Georgia, United States; <sup>3</sup>Georgia Tech Research Institute, Atlanta, Georgia, United States; <sup>4</sup>University of Georgia, Athens, Georgia, United States
- 11:00 AM 146 **Tibiotarsus morphometry in broilers selected for water efficiency following short-term water deprivation**  
 Rosie Whittle\*<sup>1</sup>, Karen M. Rivera<sup>1</sup>, Sara Orłowski-Workman<sup>1</sup>, Gregory S. Fraley<sup>2</sup>, Maricela Maqueda<sup>1</sup>, Shawna Weimer<sup>1</sup>  
<sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup>Purdue University, West Lafayette, Indiana, United States
- 11:15 AM 147 **Effects of feeding level and feeding system on reproductive physiology of broiler breeders.**  
 Thiago L. Noetzold<sup>1</sup>, Leluo Guan<sup>2</sup>, Martin Zuidhof\*<sup>3</sup> <sup>1</sup>University of Alberta, Edmonton, Alberta, Canada; <sup>2</sup>The University of British Columbia, Vancouver, British Columbia, Canada; <sup>3</sup>University of Alberta, Edmonton, Alberta, Canada
- 11:30 AM 148 **Target body weight and the length of the starter phase on fertility and hatchability of broiler breeders between 42 and 60 weeks of age**  
 Edgar O. Oviedo\*<sup>1</sup>, Gabriele J. Kinchin<sup>1</sup>, Artur De Freitas Ribeiro<sup>1</sup>, Shivaram K. Rao<sup>2</sup>, Jesus Arango<sup>2</sup> <sup>1</sup>NC STATE UNIVERSITY, Raleigh, North Carolina, United States; <sup>2</sup>Cobb Genetics, Siloam Springs, Arkansas, United States



# SATURDAY, JULY 11

## Immunology, Health and Disease Symposium: Inter-Generational Nutrition and Gut Health

Chair: Eugeni Roura, The University of Queensland

John W. H. Bassett Theatre

8:00 AM	1015S	<b>Impact of breeder nutrition on progeny performance</b> Martin Zuidhof* <sup>1</sup> <sup>1</sup> University of Alberta, Edmonton, Alberta, Canada
8:30 AM	1016S	<b>Developmental programming and in ovo strategies in broiler chickens</b> Eugeni Roura* <sup>1</sup> <sup>1</sup> The University of Queensland, Brisbane, Queensland, Australia
9:00 AM	1017S	<b>Vertical Transmission of Microbiota and Pathogens</b> Lisa R. Bielke* <sup>1</sup> , Thaciane L. Amaral <sup>1</sup> , Tracy Omasanuwa <sup>1</sup> , Muhammad Wajeeh Ul Hassan <sup>1</sup> <sup>1</sup> North Carolina State University, Raleigh, North Carolina, United States
9:30 AM	1018S	<b>Post-hatch: low crude protein strategies in the starter period</b> Shemil Macelline* <sup>1</sup> <sup>1</sup> The University of Sydney, Brownlow Hill, New South Wales, Australia
10:00 AM		<b>Break</b>
10:45 AM	1019S	<b>Low CP strategies and gut health: Post-starter periods</b> Michael Kidd* <sup>1</sup> , Kenneth B. Nelson <sup>1</sup> , Pablo Escovar Ruidiaz <sup>1</sup> , Garrett J. Mullenix <sup>2</sup> <sup>1</sup> University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup> Cargill Animal Nutrition, Elk River, Minnesota, United States
11:15 AM		<b>Panel Discussion</b>



## Processing and Products Symposium: Poultry Meat - Global Issues

Chair: Shai Barbut, University of Guelph

105 Constitution Hall

8:00 AM	1020S	<b>An overview of breast myopathies from South America</b> Sergio L. Vieira* <sup>1,2</sup> <sup>1</sup> Federal University of Rio Grande, Porto Alegre, RS, Brazil; <sup>2</sup> Instituto Brasileiro de Pesquisa Animal, Farroupilha, RS, Brazil
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## SATURDAY, JULY 11

8:30 AM	1021S	<b>North American poultry trends and challenges</b> Craig Bacon* <sup>2</sup> , Amy Matsler <sup>1</sup> <i>Simmons Prepared Foods, Noel, Missouri, United States</i> ; <sup>2</sup> <i>Simmons Foods, Siloam Springs, Arkansas, United States</i>
9:00 AM	1022S	<b>Poultry Meat – Global quality issues: an Asia Perspectives</b> Yuwares Malila* <sup>2</sup> , Yanee Srimarut <sup>1</sup> <i>BIOTEC, Thailand, Bangkok, Thailand</i> ; <sup>2</sup> <i>Food Science and Technology Association of Thailand, Bangkok, Thailand</i>
9:30 AM	1023S	<b>Omics technologies in poultry meat quality: Advancements in the molecular basis of breast myopathies</b> Martina Bordini* <sup>1</sup> , Francesca Soglia <sup>1</sup> , Massimiliano Petracci <sup>1</sup> , Shai Barbut <sup>2</sup> <i>University of Bologna, Cesena, Italy</i> ; <sup>2</sup> <i>University of Guelph, Guelph, Ontario, Canada</i>
10:00 AM		<b>Break/Poster Session I</b>
10:45 AM	1024S	<b>Chicks are cool</b> Theo Hoen* <sup>1</sup> <i>Technical University, Bennekom, Netherlands</i>
11:15 AM	1025S	<b>Selection strategies for meat quality and yield</b> Richard A. Bailey* <sup>1</sup> <i>Aviagen Ltd., Edinburgh, United Kingdom</i>
11:45 AM		<b>Panel Discussion</b>

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### Student Competition: Management and Production

Moderator: Samuel Mwangi, North Carolina State University

203 (B-D)

8:00 AM	149	<b>Evaluation of EPA ammonia emission estimating method under contemporary broiler management</b> Haley N. Drysdale* <sup>1GS</sup> , Hong Li <sup>1</sup> <i>University of Delaware, Newark, Delaware, United States</i>
8:15 AM	150	<b>Evaluation of <i>Miscanthus x giganteus</i> as an Alternative Bedding Material in Commercial Broiler Production</b> Giovanni Rollo* <sup>1GS</sup> , Zachary Williams <sup>2</sup> , Hashem Fawzy <sup>2</sup> , Jennifer Timmons <sup>2</sup> , Wells D. Hively <sup>3</sup> , Cathleen Hapeman <sup>4</sup> , Pat Millner <sup>4</sup> , Maryam Foroughi <sup>4</sup> , Gregory McCarty <sup>4</sup> , Hong Li <sup>5</sup> , Dev Gurung <sup>2</sup> <sup>1</sup> <i>University of Delaware, Newark, Delaware, United States</i> ; <sup>2</sup> <i>University of Maryland Eastern Shore, Princess Anne, Maryland, United States</i> ; <sup>3</sup> <i>USGS, Beltsville, Maryland, United States</i> ; <sup>4</sup> <i>USDA, Beltsville, Maryland, United States</i> ; <sup>5</sup> <i>University of Delaware, Newark, Delaware, United States</i>



**SATURDAY, JULY 11**

- 8:30 AM            151            **Laser environmental enrichment reduced incidence of woody breast and white striping without negatively impacting bone quality in Ross 708 broilers**  
 Kayla Elmore\*1GS, Anna Johnson<sup>1</sup>, Elizabeth Bobeck<sup>1</sup> <sup>1</sup>*Iowa State University, Ames, Iowa, United States*
- 8:45 AM            152            **Stepwise crude protein reduction with exogenous multicomponent protease supplementation improves broiler efficiency and environmental sustainability**  
 Prince Agyemang\*1GS, Danielle Marie Estacio<sup>3</sup>, Glenmer B. Tactacan<sup>2</sup>, Marcia d. Vieira<sup>3</sup>, Olufemi Babatunde<sup>3</sup>, Sudipto Halda<sup>6</sup>, Melissa Otis<sup>5</sup>, Ludovic Lahaye<sup>4</sup> <sup>1</sup>*McGill University, Sainte Anne-de-Bellevue, Quebec, Canada;* <sup>2</sup>*Jefo Nutrition, Inc., Saint-Hyacinthe, Quebec, Canada;* <sup>3</sup>*Jefo Nutrition Inc, St. Hyacinthe, Quebec, Canada;* <sup>4</sup>*Jefo Nutrition Inc., St. Hyacinthe, Quebec, Canada;* <sup>5</sup>*Jefo Nutrition Inc, St Hyacinthe, Quebec, Canada;* <sup>6</sup>*Agrivet Research and Advisory, Kolkata, West Bengal, India*
- 9:00 AM            153            **IndigoLT altered commercial broiler litter microbiome structure over consecutive growouts and reduced *Enterococcus*-associated signatures**  
 Ashley A. Tarcin\*1GS, Elena G. Olson<sup>2</sup>, Brett Hale<sup>3</sup>, Steven C. Ricke<sup>4</sup> <sup>1</sup>*University of Wisconsin- Madison, Madison, Wisconsin, United States;* <sup>2</sup>*UW-Madison, Madison, Wisconsin, United States;* <sup>3</sup>*AgriGro, Doniphan, Missouri, United States;* <sup>4</sup>*University of Wisconsin, Madison, Wisconsin, United States*
- 9:15 AM            154            **Improving the Utilization of Dirty Eggs in Broiler Breeder Flocks Using Egg Washing**  
 Tatyany Manj\*1GS, Beverly L. McLendon<sup>1</sup>, Emmillie Boot<sup>1</sup>, Rebecca Wysocky<sup>1</sup>, Michael Wineland<sup>1</sup>, Ramon Malheiros<sup>1</sup> <sup>1</sup>*North Carolina State University, Raleigh, North Carolina, United States*





## SATURDAY, JULY 11

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- 9:30 AM 155 **Producer-led evaluation of cricket and mealworm meals as alternative dietary protein sources in 6-week-old Ross 308 broiler chickens**  
 Peter Bina\*<sup>1GS</sup>, Hamza Javaid<sup>2</sup>, Amritha Ajayan<sup>3</sup>, DHANANJAI MURINGATTU PRABHAKARAN<sup>4</sup>, Sally Noll<sup>5</sup>, Komala Arsi<sup>6</sup>, Kumar Venkitanarayanan<sup>7</sup>, Aaron Brand<sup>8</sup>, Anup Kollanoor Johny<sup>9</sup>  
<sup>1</sup>University of Minnesota, Falcon Heights, Minnesota, United States; <sup>2</sup>University of Minnesota, Saint Paul, Minnesota, United States; <sup>3</sup>University of Minnesota, Saint Paul, Minnesota, United States; <sup>4</sup>UNIVERSITY OF MINNESOTA, Saint Paul, Minnesota, United States; <sup>5</sup>University of Minnesota, Saint Paul, Minnesota, United States; <sup>6</sup>Poultry Production and Product Safety Research, Fayetteville, Arkansas, United States; <sup>7</sup>University of Connecticut, Storrs, Connecticut, United States; <sup>8</sup>Brand Farms, Farmington, Minnesota, United States; <sup>9</sup>University of Minnesota, Woodbury, Minnesota, United States
- 9:45 AM 156 **Adjusting precision feeding targets reveals clever patterns of intake in broiler breeders**  
 Annalise M. Steadman\*<sup>1UG</sup>, Martin Zuidhof<sup>2</sup> <sup>1</sup>University of Alberta, Edmonton, Alberta, Canada; <sup>2</sup>University of Alberta, Edmonton, Alberta, Canada
- 10:00 AM **Break**
- 10:45 AM 157 **Canola meal or a pea-lentil mix as protein sources maintained laying performance and hatchability compared with soybean meal in broiler breeder diets**  
 Bipul Chandra Ray\*<sup>1GS</sup>, Arun Kumar<sup>1</sup>, Mehdi Toghyani<sup>23</sup>, Beini Xu<sup>1</sup>, Eugeni Roura<sup>1</sup> <sup>1</sup>Nutrition and Chemosensory Science Group, Centre for Animal Science, Queensland Alliance for Agriculture and Food Innovation (QAAFI), The University of Queensland, Brisbane, Queensland, Australia; <sup>2</sup>School of Life and Environmental Sciences, The University of Sydney, Brownlow Hill, New South Wales, Australia; <sup>3</sup>Poultry Research Foundation, The University of Sydney, Camden, New South Wales, Australia
- 11:00 AM 158 **Impact of housing type on broiler breeder body composition and hen mortality**  
 Beverly L. McLendon\*<sup>1GS</sup>, Emmillie Boot<sup>1</sup>, Tatyany Mani<sup>1</sup>, Caleb M. Marshall<sup>1</sup>, Rebecca Wysocky<sup>1</sup>, Christina Sigmon<sup>1</sup>, Ramon Malheiros<sup>1</sup> <sup>1</sup>North Carolina State University, Raleigh, North Carolina, United States



## SATURDAY, JULY 11

- 11:15 AM 159 **Deep neural networks for body weight category classification in 15-week-old pullets using depth images**  
Adrielle C. Santos\*<sup>1GS</sup>, Lilian F. Souza<sup>1</sup>, Carlos B. Rabello<sup>1</sup>, Lucas A. Torres<sup>2</sup>, Elton F. Oliveira<sup>1</sup>, João P. Lima<sup>2</sup>, Kellyton d. Brito<sup>2</sup>, Denis H. Salvadeo<sup>3</sup> <sup>1</sup>*Federal Rural University of Pernambuco, Recife, Pernambuco, Brazil;* <sup>2</sup>*Federal Rural University of Pernambuco, Recife, Brazil;* <sup>3</sup>*São Paulo State University, São Paulo, Brazil*
- 11:30 AM 160 **Optimizing the sample size for northern fowl mite population assessment in laying hens**  
Hayley L. Sutherland\*<sup>1GS</sup>, Luiz F. Brito<sup>1</sup>, Amy C. Murillo<sup>2</sup>, Marisa A. Erasmus<sup>1</sup> <sup>1</sup>*Purdue University, West Lafayette, Indiana, United States;* <sup>2</sup>*University of California, Riverside, California, United States*
- 11:45 AM 161 **The effect of light wavelength on the behavior and health of Nicholas Select infrared beak-treated and sham-beak-treated turkey hens reared to 11 weeks**  
Domenica V. Medina Sanchez\*<sup>1GS</sup>, Tory Shynkaruk<sup>1</sup>, Carolin Adler<sup>3</sup>, Trever Crowe<sup>2</sup>, Susantha Gomis<sup>4</sup>, Karen Schwean-Lardner<sup>1</sup> <sup>1</sup>*University of Saskatchewan, Saskatoon, Saskatchewan, Canada;* <sup>2</sup>*University of Saskatchewan, Saskatoon, Saskatchewan, Canada;* <sup>3</sup>*University of Saskatchewan, Saskatoon, Saskatchewan, Canada;* <sup>4</sup>*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*
- 12:00 PM 162 **Characterizing Non-Infectious Finisher Mortality: Age of Onset and Patterns in Commercial Turkey Flocks**  
Phoebe C. Flaskey\*<sup>1GS</sup>, Dawn Koltes<sup>1</sup> <sup>1</sup>*Iowa State University, Ames, Iowa, United States*

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### Student Competition: Metabolism and Nutrition - Amino Acids II

Moderator: Pratima Adhikari, MS State

201 (A-F)

- 8:00 AM 163 **Arginine silicate inositol and guanidinoacetic acid improve meat quality in market weight broilers**  
Michael Carroll\*<sup>1GS</sup>, Elizabeth Bobeck<sup>1</sup> <sup>1</sup>*Iowa State University, Ames, Iowa, United States*
- 8:15 AM 164 **Practical assessment of dietary arginine needs of broilers**  
Pablo Escovar Ruidiaz\*<sup>1GS</sup>, Savannah Wells<sup>1</sup>, Mitchell Vaught<sup>1</sup>, Virginia G. Slick<sup>1</sup>, Kenneth B. Nelson<sup>1</sup>, Spencer T. Karn<sup>1</sup>, Michael Kidd<sup>1</sup> <sup>1</sup>*University of Arkansas, Fayetteville, Arkansas, United States*



## SATURDAY, JULY 11

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- 8:30 AM 165 **Interaction between low crude protein and raised without antibiotics programs on nutrient utilization, plasma biochemistry, body composition, cecal digesta SCFA, and litter quality in broiler chicken**  
Sylvester Mutinda\*<sup>1GS</sup>, Nayara Tavares Ferreira<sup>2</sup>, Stephanie Torrey<sup>2</sup>, Marie Pierre Létourneau-Montminy<sup>3</sup>, Elijah G. Kiarie<sup>1</sup>  
<sup>1</sup>University of Guelph, Guelph, Ontario, Canada; <sup>2</sup>Trouw Nutrition, North America, Puslinch, Ontario, Canada; <sup>3</sup>Université Laval, Quebec, Quebec, Canada
- 8:45 AM 166 **Early phase fortification of key amino acids supports broiler growth performance following later phase introduction of low soybean meal diets**  
Deng Zhan\*<sup>12GS</sup>, Eunjoo Kim<sup>12</sup>, Shemil Macelline<sup>12</sup>, Mehdi Toghiani<sup>32</sup>, Jiasui Li<sup>12</sup>, Sonia Liu<sup>12</sup>  
<sup>1</sup>University of Sydney, Sydney, New South Wales, Australia; <sup>2</sup>University of Sydney, Sydney, New South Wales, Australia; <sup>3</sup>The University of Sydney, Brownlow Hill, New South Wales, Australia
- 9:00 AM 167 **Interactive effects of yeast supplementation and amino acid density in the finisher phase on growth performance and organ weight in broiler chickens**  
Felix Njeri\*<sup>1GS</sup>, Alexander Wickhorst<sup>1</sup>, Virginie Blanvillain<sup>2</sup>, Elijah G. Kiarie<sup>3</sup>  
<sup>1</sup>University of Guelph, Guelph, Ontario, Canada; <sup>2</sup>AB Vista, Montreal, Quebec, Canada; <sup>3</sup>University of Guelph, Guelph, Ontario, Canada
- 9:15 AM 168 **Soybean meal inclusion rate and arginine supplementation on growth performance, body composition and carcass characteristics in broilers under cyclic heat stress**  
Seshidhar Reddy Gudidoddi\*<sup>1GS</sup>, Doyun Goo<sup>2</sup>, Sai Kumar Reddy Ragyari<sup>3</sup>, Ishwari Gyawali<sup>4</sup>, Hemanth R. Katha<sup>1</sup>, Woo K. Kim<sup>5</sup>  
<sup>1</sup>University of Georgia, Athens, Georgia, United States; <sup>2</sup>University of Georgia, Athens, Georgia, United States; <sup>3</sup>UNIVERSITY OF GEORGIA, Athens, Georgia, United States; <sup>4</sup>University of Georgia, Athens, Georgia, United States; <sup>5</sup>University of Georgia, Athens, Georgia, United States
- 9:30 AM 169 **Interactive effects of dietary energy and feed grade amino acid inclusion on the growth performance, processing characteristics, and body composition of broilers**  
Jose R. Hernandez\*<sup>1GS</sup>, Jason T. Lee<sup>2</sup>, Roshan Adhikari<sup>2</sup>, Samuel Rochell<sup>1</sup>  
<sup>1</sup>Auburn University, Auburn, Alabama, United States; <sup>2</sup>CJ Bio America, Goliad, Texas, United States



# SATURDAY, JULY 11

## Immunology, Health and Disease: Feed Additives II

Moderator: Revathi Shanmugasundaram, USDA, ARS

206 (E-F)

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| 8:15 AM | 170 | <p><b>Mechanistic programming of the gut by a novel health enzyme</b><br/> Nima Emami*<sup>1</sup>, Gray Stengel<sup>1</sup>, Whitney Nelson<sup>1</sup>, Connie F. Matthiesen<sup>2</sup>, Brian Larsen<sup>2</sup> <sup>1</sup>Novonesis NA, Fayetteville, Arkansas, United States; <sup>2</sup>Novonesis A/S, Lyngby, Denmark</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 8:30 AM | 171 | <p><b>Methionine Hydroxy Analogue Bis-Chelated Trace Minerals Reduce <i>Enterococcus cecorum</i> Translocation in Broilers</b><br/> Thaciane L. Amaral<sup>1</sup>, Demilade I. Ibiwoye<sup>1</sup>, Philip Yeboah<sup>1</sup>, Tracy Omasanuwa<sup>1</sup>, Alexandra Ulans<sup>1</sup>, Melanie Roux<sup>2</sup>, Hugo Romero-Sanchez<sup>2</sup>, Allison Pullin<sup>1</sup>, Lisa R. Bielke*<sup>1</sup> <sup>1</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>2</sup>Novus International Inc., Chesterfield, Missouri, United States</p>                                                                                                                                                                                                                                                                                                         |
| 8:45 AM | 172 | <p><b>Effect of dietary omega-3 polyunsaturated fatty acids (PUFA) on performance, yolk fatty acid composition, and antibody response to avian encephalomyelitis (AE) vaccination in pullets and layers</b><br/> Shengnan Li*<sup>1</sup>, Mansi Patel<sup>1</sup>, Jay Petkau<sup>2,3</sup>, Yanxing Niu<sup>1</sup>, Gemmar Maramot<sup>1</sup>, Chengbo Yang<sup>4</sup>, Heather Blewett<sup>5,2,3</sup>, James D. House<sup>1,5,2</sup>, Anna Rogiewicz<sup>6</sup> <sup>1</sup>University of Manitoba, Winnipeg, Manitoba, Canada; <sup>2</sup>St. Boniface Research Centre, Winnipeg, Manitoba, Canada; <sup>3</sup>Agriculture and Agri-Food Canada, Morden, Manitoba, Canada; <sup>4</sup>University of Manitoba, Winnipeg, Manitoba, Canada; <sup>5</sup>University of Manitoba, Winnipeg, Manitoba, Canada; <sup>6</sup>University Of Manitoba, Winnipeg, Manitoba, Canada</p> |
| 9:00 AM | 173 | <p><b>Circulating immune cell populations and energy phenotype of broilers based on lipid source and pigmentation</b><br/> Michael Carroll*<sup>1</sup>, Brian J. Kerr<sup>2</sup>, Elizabeth Bobeck<sup>1</sup> <sup>1</sup>Iowa State University, Ames, Iowa, United States; <sup>2</sup>United States Department of Agriculture, Ames, Iowa, United States</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

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## SATURDAY, JULY 11

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- 9:15 AM 174 **Effects of Monosilicic Acid Supplementation on Lymphocyte Proliferation and Cytokine Expression in *Salmonella*-Challenged Broiler Chickens**  
Ramesh Selvaraj\*<sup>1</sup>, Charles L. Hofacre<sup>2</sup>, Matthew K. Jones<sup>3</sup>, Daniel Pelaez<sup>5</sup>, Enrique N. Montiel<sup>4</sup> <sup>1</sup>University of Georgia, Athens, Georgia, United States; <sup>2</sup>Southern Poultry Research Group, Inc., Watkinsville, Georgia, United States; <sup>3</sup>Southern Poultry Research Group, Watkinsville, Georgia, United States; <sup>4</sup>Addix Biotech LLC, Weston, Florida, United States; <sup>5</sup>University of Miami, Miami, Florida, United States
- 9:30 AM 175 **A mixture of lauric glycerides yields stronger antibacterial effects *in vitro* than pure  $\alpha$ -monolaurin**  
Tim Goossens\*<sup>1</sup>, Olga Lem  le<sup>1</sup> <sup>1</sup>Adisseo, Sint-Niklaas, Belgium
- 9:45 AM 176 **Anticoccidial drug resistance patterns using Anticoccidial Sensitivity Tests**  
Gregory F. Mathis\*<sup>1</sup>, Brett Lumpkins<sup>1</sup> <sup>1</sup>Southern Poultry Feed & Research, Inc., Athens, Georgia, United States

### Student Competition: Metabolism and Nutrition - Vitamins and Minerals

Moderator: Reza Akbari Moghaddam Kakhki, Universit   de Montr  al

205 (A-D)

- 8:30 AM 177 **Broilers response to dietary calcium and digestible phosphorus from 0 to 10 days of age**  
Julie Bourdon\*<sup>1,2,6S</sup>, Lewis Aguirre<sup>1</sup>, Matheus Reis<sup>1</sup>, Ana Isabel Garc  a-Ruiz<sup>1</sup>, Agn  s Narcy<sup>3</sup>, Marie Pierre L  tourneau-Montminy<sup>2</sup> <sup>1</sup>Trouw Nutrition, El Viso de San Juan, Spain; <sup>2</sup>Universit   Laval, Qu  bec, Quebec, Canada; <sup>3</sup>INRAE, Nouzilly, France
- 8:45 AM 178 **Effects of dietary calcium and phosphorus and phytase supplementation on phytate degradation and mineral digestibility in broilers**  
Alexandre B. Mariani\*<sup>1,3,6S</sup>, Maamer Jlali<sup>2</sup>, Agnes Narcy<sup>3</sup>, Marie Pierre L  tourneau-Montminy<sup>1</sup> <sup>1</sup>Universit   Laval, Porto Alegre, Rio Grande do Sul, Brazil; <sup>2</sup>Adisseo France SAS, Malicorne, France; <sup>3</sup>INRAE, Nouzilly, France



## SATURDAY, JULY 11

- 9:00 AM 179 **Effects of phytase level and trace mineral source on broiler performance, processing yield, and myopathies**  
 Rahul Reddy\*<sup>1GS</sup>, Rosana Hirai<sup>1</sup>, Addison Elstner<sup>2</sup>, Abigail Flores<sup>3</sup>, Corbin Preusse<sup>1</sup>, Kasey Young<sup>1</sup>, Craig Wyatt<sup>7</sup>, Austin Jasek<sup>6</sup>, Chance Williams<sup>4</sup>, Casey M. Owens<sup>5</sup>, Audrey McElroy<sup>1</sup> <sup>1</sup>Texas A&M University, College Station, Texas, United States; <sup>2</sup>Texas A&M University, College station, Texas, United States; <sup>3</sup>Texas A&M University, College Station, Texas, United States; <sup>4</sup>Wayne-Sanderson Farms, Hoschton, Georgia, United States; <sup>5</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>6</sup>Zinpro Corporation, Eden Prairie, Minnesota, United States; <sup>7</sup>AB Vista, Marlborough, United Kingdom
- 9:15 AM 180 **Interaction of adequate and reduced dietary macro- and micro minerals and phytase on performance and skeletal development of Hy-Line W-36 pullets**  
 Randy N. Domer\*<sup>1GS</sup>, Li Zhang<sup>1</sup>, Kelley G. Wamsley<sup>1</sup>, Michael Elliot<sup>2</sup>, Craig Wyatt<sup>3</sup>, Duarte Neves<sup>4</sup>, Austin Jasek<sup>4</sup>, Pratima Adhikari<sup>1</sup> <sup>1</sup>Mississippi State University, Starkville, Mississippi, United States; <sup>2</sup>A & E Nutrition Services, Petersburg, Pennsylvania, United States; <sup>3</sup>AB Vista, Plantation, Florida, United States; <sup>4</sup>Zinpro, Minneapolis, Minnesota, United States
- 9:30 AM 181 **Optimal intake of zinc amino acid complex in commercial laying hens from 30 to 48 weeks of age based on productive performance, egg quality, and bone densitometry**  
 Webert A. Silva<sup>1</sup>, Carlos B. Rabello<sup>1</sup>, Lilian F. Souza<sup>1</sup>, Marcos José B. Santos\*<sup>1GS</sup>, Elton F. Oliveira<sup>1</sup>, Adrielle C. Santos<sup>1</sup>, Brenna Cristine R. Silva<sup>2</sup>, Katariny L. Abreu<sup>1</sup>, Alba Fireman<sup>2</sup> <sup>1</sup>Federal Rural University of Pernambuco, Recife, Pernambuco, Brazil; <sup>2</sup>Zinpro Corporation, Eden Prairie, Minnesota, United States
- 9:45 AM 182 **Estimation of the optimal supplemental zinc intake in the form of metal amino acid for laying hens from 55 to 71 weeks of age**  
 Elton F. Oliveira\*<sup>1GS</sup>, Carlos B. Rabello<sup>1</sup>, Lilian F. Souza<sup>1</sup>, Marcos José B. Santos<sup>1</sup>, Webert A. Silva<sup>1</sup>, Adrielle C. Santos<sup>1</sup>, Katariny L. Abreu<sup>1</sup>, Alba Fireman<sup>2</sup>, Brenna Cristine R. Silva<sup>2</sup> <sup>1</sup>Federal Rural University of Pernambuco, Recife, Pernambuco, Brazil; <sup>2</sup>Zinpro Corporation, Eden Prairie, Minnesota, United States
- 10:00 AM **Break**
- 10:45 AM 183 **Reduction of copper through proteinate supplementation in laying hens at peak production**  
 Vinício d. Cardoso\*<sup>1GS</sup>, Letícia A. Silva<sup>2</sup>, Felipe B. Perroni<sup>2</sup>, Ellen S. Nascimento<sup>2</sup>, Luiz F. Costa e Silva<sup>3</sup>, Adriana Nascimento<sup>3</sup>, Julia C. Rocha Neta<sup>2</sup>, Tatiana C. Santos<sup>4</sup> <sup>1</sup>Universidade Estadual de Maringá, Maringá, PR, Brazil; <sup>2</sup>Universidade Estadual de Maringá, Maringá, Paraná, Brazil; <sup>3</sup>Alltech, Maringá, Paraná, Brazil; <sup>4</sup>State University of Maringá, Maringá, PR, Brazil



## SATURDAY, JULY 11

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- 11:00 AM 184 **Supplementation of selenium-enriched yeast in broiler breeder diets and its effect on incubation parameters**  
Manuela B. Netto\*<sup>1UG</sup>, Renata Rodrigues Gomes<sup>1</sup>, Kalebe de Oliveira Maia<sup>1</sup>, Geovana Ferreira Barbosa<sup>1</sup>, Graciele Araújo Oliveira<sup>2</sup>, Mihayr Moraes Jardim<sup>3</sup>, Jose Henrique Stringhini<sup>1</sup>  
<sup>1</sup>Universidade Federal de Goiás, Goiânia, GO, Brazil; <sup>2</sup>Phileo, Goiânia, GO, Brazil; <sup>3</sup>Universidade Federal de Goiás, Goiânia, GO, Brazil
- 11:15 AM 185 **Effects of Calcium and Phosphorus Feeding Programs on Egg Quality of Cage-free Laying Hens 34-46 Weeks of Age**  
Xavia A. Harris\*<sup>1GS</sup>, Patrick Tamatey<sup>1</sup>, Stephanie A. Ansh<sup>1</sup>, Priyantha K. Gunawardana<sup>2</sup>, Dervan D. Bryan<sup>1</sup> <sup>1</sup>Penn State University, State college, Pennsylvania, United States; <sup>2</sup>Hilandale Farms, Gettysburg, Pennsylvania, United States
- 11:30 AM 186 **Phase-specific optimization of dietary calcium and available phosphorus in laying hens: Effects on production performance, eggshell quality, skeletal integrity, and mineral utilization**  
Shan R. Nawarathne\*<sup>1GS</sup>, Jung Min Heo<sup>1</sup> <sup>1</sup>Chungnam National University, Daejeon, Korea (the Republic of)
- 11:45 AM 187 **Assessment of water-soluble vitamin levels on Cobb 800 male broiler performance**  
Spencer T. Karn\*<sup>1GS</sup>, Virginia G. Slick<sup>1</sup>, Kenneth B. Nelson<sup>1</sup>, Pablo Escovar Ruidiaz<sup>1</sup>, Michael Kidd<sup>1</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States
- 12:00 PM 188 **Effects of Varying Levels of Vitamin A in the Starter Phase Diet in Male Cobb 800 Broilers**  
Virginia G. Slick\*<sup>1GS</sup>, Spencer T. Karn<sup>1</sup>, Pablo Escovar Ruidiaz<sup>2</sup>, Kenneth B. Nelson<sup>3</sup>, Michael Kidd<sup>4</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>3</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>4</sup>University of Arkansas, Fayetteville, Arkansas, United States

### Student Competition: Metabolism and Nutrition - Feed Additives

202 (A-D)

- 8:45 AM 189 **Dose-response of an essential oil blend on nutrient utilization and nitrogen balance in broiler chickens**  
Hansol Kim\*<sup>1GS</sup>, Tuoying Ao<sup>2</sup>, Michael J. Ford<sup>1</sup>, Jose Soto<sup>2</sup>, Rebecca Delles<sup>2</sup>, Sunday A. Adedokun<sup>1</sup> <sup>1</sup>University of Kentucky, Lexington, Kentucky, United States; <sup>2</sup>Alltech Inc., Nicholasville, Kentucky, United States



## SATURDAY, JULY 11

- 9:00 AM 190 **Dose-dependent effects of dietary propolis on growth performance, oxidative status, intestinal integrity, and body composition in broilers**  
 Hanseo Ko\*<sup>1GS</sup>, Janghan Choi<sup>2</sup>, Guanchen Liu<sup>3</sup>, Dima White<sup>4</sup>, Milan K. Sharma<sup>5</sup>, Doyun Goo<sup>1</sup>, Woo K. Kim<sup>1</sup> <sup>1</sup>University of Georgia, Athens, Georgia, United States; <sup>2</sup>Texas Tech University, Lubbock, Texas, United States; <sup>3</sup>Charoen Pokphand Group, Beijing, China; <sup>4</sup>Global Animal Health, Cleveland, Tennessee, United States; <sup>5</sup>Cornell University, Ithaca, New York, United States
- 9:15 AM 191 **Evaluation of the effect of a spore-forming oligosaccharide-degrading probiotic on metabolizable energy, oligosaccharide disappearance, and cecal volatile fatty acid concentrations using restrict-fed broiler chickens**  
 Seth Hufford\*<sup>1GS</sup>, Kyle D. Teague<sup>5</sup>, Chrysta N. Beck<sup>2</sup>, Gisela F. Erf<sup>3</sup>, Benjamin Parsons<sup>4</sup> <sup>1</sup>University of Arkansas, Siloam Springs, Arkansas, United States; <sup>2</sup>Mississippi State University, Starkville, Mississippi, United States; <sup>3</sup>University of Arkansas System Division of Agriculture, Fayetteville, Arkansas, United States; <sup>4</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>5</sup>University of Arkansas, Fayetteville, Arkansas, United States
- 9:30 AM 192 **Dietary supplementation of a blend of essential oils improves growth performance and intestinal barrier integrity in broiler chickens under tropical conditions**  
 Yizrel Sapan\*<sup>1GS</sup>, Faizal Muttaqin<sup>1</sup>, Nur'alim Hidayaturohman<sup>1</sup>, Randi Randi<sup>1</sup>, Anisa Aulia<sup>1</sup>, Muhlisin Muhlisin<sup>1</sup>, Asih Kurniawati<sup>1</sup>, Chusnul Hanim<sup>1</sup>, Muhsin Al Anas<sup>1</sup> <sup>1</sup>Universitas Gadjah Mada, Yogyakarta, DI Yogyakarta, Indonesia
- 9:45 AM 193 **Effects of high-carotenoid corn and canthaxanthin on egg quality and reproduction in late-phase broiler breeders**  
 Patrick Tamatey\*<sup>1GS</sup>, Dervan D. Bryan<sup>1</sup> <sup>1</sup>Penn State University, State college, Pennsylvania, United States
- 10:00 AM **Break**
- 10:45 AM 194 **Dietary dual-strain *Bacillus*-based probiotic modulates the gut microbiota and improves productive performance, egg quality, blood parameters, intestinal morphology and bone mineralization in early-lay hens**  
 Sehyeok Oh\*<sup>1GS</sup>, In Sun Yu<sup>2</sup>, Antoine Meuter<sup>3</sup>, Jung Min Heo<sup>1</sup> <sup>1</sup>Chungnam National University, Daejeon, Korea (the Republic of); <sup>2</sup>Novonesis (Thailand) Co., Ltd., Bangkok, Thailand; <sup>3</sup>Novonesis A/S, Hørsholm, Denmark



## SATURDAY, JULY 11

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- 11:00 AM 195 **Essential oils and sodium butyrate improve intestinal integrity in laying hens fed a low-crude protein diet**  
Irvan Irvan\*<sup>1GS</sup>, Muhlisin Muhlisin<sup>1</sup>, Muhsin Al Anas<sup>1</sup> <sup>1</sup>*Universitas Gadjah Mada, Kabupaten Sleman, 55281, Yogyakarta, Indonesia*
- 11:15 AM 196 **Effects of an essential oil, a yeast-derived product, and an organic acid versus an antibiotic on production performance and egg quality of late-phase Lohmann laying hens**  
Venuste Maniraguha\*<sup>1GS</sup>, Deborah Adewole<sup>1</sup> <sup>1</sup>*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*
- 11:30 AM 197 **The effects of a *Bacillus*-based direct-fed microbial supplementation on Pekin ducks under heat stress challenge**  
Emily Jiral\*<sup>1GS</sup>, Colby Allensworth<sup>2</sup>, Isabella R. Villarreal<sup>3</sup>, Hector Leyva-Jimenez<sup>4</sup>, Brian Dirks<sup>5</sup>, Firmin Delago<sup>6</sup>, Gregory Archer<sup>7</sup>  
<sup>1</sup>*Texas A&M University, College Station, Texas, United States;* <sup>2</sup>*Texas A&M University, Bryan, Texas, United States;* <sup>3</sup>*Texas A&M University, College Station, Texas, United States;* <sup>4</sup>*United Animal Health, Sheridan, Indiana, United States;* <sup>5</sup>*United Animal Health, Audubon, Pennsylvania, United States;* <sup>6</sup>*Microbial Discovery Group, Oak Creek, Wisconsin, United States;* <sup>7</sup>*Texas A&M Agrilife Extension, College Station, Texas, United States*

## Metabolism and Nutrition Symposium: Nutrition and Management Strategies for Extended Laying Cycle

Chair: Pratima Adhikari, MS State

John W. H. Bassett Theatre

- 1:15 PM 1026S **Persistence in the extended laying cycle. Trends, challenges and opportunities in productivity, bird health, welfare and adaptation to diverse production settings**  
Ian Dunn\*<sup>1</sup> <sup>1</sup>*The Roslin Institute and Royal (Dick) School of Veterinary Studies, Midlothian, Scotland, United Kingdom*
- 1:45 PM 1027S **Growth trajectory before sexual maturity? Exploring the impact of body composition at the point of lay.**  
Grégory Y. Bédécarrats\*<sup>1</sup>, Charlene Hanlon<sup>2</sup> <sup>1</sup>*University of Guelph, Guelph, Ontario, Canada;* <sup>2</sup>*Auburn University, Auburn, Alabama, United States*
- 2:15 PM 1028S **Nutritional considerations for setting up pullets for long-life production**  
Doug Korver\*<sup>1</sup> <sup>1</sup>*Alpine Poultry Nutrition, Inc., Edmonton, Alberta, Canada*



# SATURDAY, JULY 11

2:45 PM	1029S	<p><b>The role of dietary protein and amino acids in modulating egg production, bone health, and feathering in the extended laying cycle</b></p> <p>Jason T. Lee*<sup>1</sup>, Roshan Adhikari<sup>2</sup> <sup>1</sup><i>CJ Bio America, Goliad, Texas, United States</i>; <sup>2</sup><i>CJ Bio America Inc, Downers Grove, Illinois, United States</i></p>
3:15 PM		<b>Break</b>
3:45 PM	1030S	<p><b>Nutritional strategies for modulating eggshell quality and skeletal integrity in the extended laying cycle?</b></p> <p>Woo K. Kim*<sup>1</sup> <sup>1</sup><i>University of Georgia, Athens, Georgia, United States</i></p>
4:15 PM	1031S	<p><b>Reappraisal of management approaches for an extended laying cycle</b></p> <p>Teun van de Braak*<sup>1</sup> <sup>1</sup><i>Hendrix Genetics, Boxmeer, Noord Brabant, Netherlands</i></p>
4:45 PM		<b>Panel Discussion</b>



## Microbiology and Food Safety Symposium: Advancing the Frontier: Integrated Research Approaches to Address Foodborne Pathogen Contamination Across the Poultry Supply Chain

*Chair: Caitlin Harris, USDA-ARS National Poultry Research Center*

*105 Constitution Hall*

1:15 PM		<b>Introduction</b>
1:25 PM	1032S	<p><b>Promoting integrated research to address longstanding barriers and accelerate progress in <i>Salmonella</i> control</b></p> <p>Kim Cook*<sup>1</sup>, Caitlin Harris<sup>2</sup> <sup>1</sup><i>USDA-ARS, Beltsville, Maryland, United States</i>; <sup>2</sup><i>USDA-ARS National Poultry Research Center, Athens, Georgia, United States</i></p>
1:45 PM	1033S	<p><b>Taking an integrated approach to evaluate how the environment affects poultry production</b></p> <p>Adelumola Oladeinde*<sup>1</sup>, Michael J. Rothrock<sup>1</sup>, Micah Lewis<sup>1</sup>, Guoming Li<sup>2</sup>, Taejung Chung<sup>1</sup>, Zaid Abdo<sup>3</sup> <sup>1</sup><i>USDA-ARS, Athens, Georgia, United States</i>; <sup>2</sup><i>University of Georgia, Athens, Georgia, United States</i>; <sup>3</sup><i>Colorado State University, Fort Collins, Colorado, United States</i></p>





# SATURDAY, JULY 11

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2:15 PM	1034S	<p><b>Salmonella Enteritidis with decreased susceptibility to ciprofloxacin (DSC) in chickens: emergence, outbreaks and vaccination</b></p> <p>Shawn Bearson*<sup>1</sup>, David J. Bradshaw<sup>1</sup>, Samuel J. Whelan<sup>1</sup>, Maya P. Encinosa<sup>1</sup>, Durga P. Neupane<sup>1</sup>, Melissa S. Monson<sup>1</sup>, Christopher L. Anderson<sup>1</sup>, Bradley L. Bearson<sup>2</sup> <sup>1</sup>USDA-ARS-National Animal Disease Center, Ames, Iowa, United States; <sup>2</sup>USDA-ARS-National Laboratory for Agriculture and the Environment, Ames, Iowa, United States</p>
2:45 PM	1035S	<p><b>The Role of Live Production in Mitigating Foodborne Pathogen Load at the Plant</b></p> <p>Brandon T. Armwood*<sup>1</sup> <sup>1</sup>Pilgrim's, Raleigh, North Carolina, United States</p>
3:15 PM		<b>Break</b>
4:00 PM	1036S	<p><b>Multi-Institutional Investigations of Contamination Dynamics in Post-Harvest Poultry Systems</b></p> <p>Elizabeth A. McMillan*<sup>1</sup> <sup>1</sup>USDA-ARS, USNPRC, Athens, Georgia, United States</p>
4:30 PM	1037S	<p><b>A Systems-Based Approach to Pathogen Control in Primary and Secondary Poultry Processing</b></p> <p>Dianna Bourassa*<sup>1</sup> <sup>1</sup>Auburn University, Auburn, Alabama, United States</p>
5:00 PM		<b>Panel Discussion</b>

## Metabolism and Nutrition: General Nutrition I

201 (A-F)

1:15 PM	198	<p><b>Methods for assessment of energy availability in lipid-based feedstuffs</b></p> <p>Benjamin Parsons*<sup>1</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States</p>
1:45 PM	199	<p><b>Metabolic markers linked to growth performance in Ross 708 broilers fed varying crude protein</b></p> <p>Doyun Goo*<sup>1</sup>, Seshidhar R. Gudidoddi<sup>1</sup>, Sai Kumar Reddy Ragyari<sup>1</sup>, Woo K. Kim<sup>1</sup> <sup>1</sup>University of Georgia, Athens, Georgia, United States</p>





# SATURDAY, JULY 11

2:00 PM	200	<p><b>Testing metabolizable energy-derived net energy systems against an outcome-based energy system for predicting lean growth in broilers</b></p> <p>Diego Martinez*<sup>1</sup>, Carol Ponce de Leon<sup>2</sup>, Oscar Aguilar<sup>1</sup>, Craig Coon<sup>3</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup>Independent Consultant, Fayetteville, Arkansas, United States; <sup>3</sup>University of Arkansas, Fayetteville, Arkansas, United States</p>
2:15 PM	201	<p><b>Practical interest of variables affecting the physical characteristics of commercial soybean meals</b></p> <p>Nada Souid<sup>1</sup>, Miguel Ángel Ibáñez<sup>1</sup>, Guillermo Talegón<sup>1</sup>, Rosa Lázaro<sup>1</sup>, Gonzalo González Mateos*<sup>1</sup> <sup>1</sup>Universidad Politécnica de Madrid, Madrid, Spain</p>
2:30 PM	202	<p><b>Nutritional significance of condensed tannin content in laying hen diets in the context of high dietary inclusion of faba bean (<i>Vicia faba</i>): Effects on hen performance and objective egg quality</b></p> <p>Doug Korver<sup>12</sup>, Matt Oryschak*<sup>1</sup> <sup>1</sup>University of Alberta, Edmonton, Alberta, Canada; <sup>2</sup>Alpine Poultry Nutrition, Inc., Edmonton, Alberta, Canada</p>
2:45 PM	203	<p><b>Immunoassay test coupled with HPLC-MS/MS allows for rapid screening and confirmatory quantification of mycotoxins in corn and poultry feed.</b></p> <p>Anthony Pokoo-Aikins*<sup>1</sup>, Trevor R. Mitchell<sup>1</sup>, Quentin Read<sup>2</sup>, Anthony E. Glenn<sup>1</sup> <sup>1</sup>USDA ARS, Athens, Georgia, United States; <sup>2</sup>USDA ARS, Raleigh, North Carolina, United States</p>
3:00 PM	204	<p><b>Vertical transfer of mycotoxins compromises broiler performance: mitigation through breeder-targeted intervention</b></p> <p>Arnau Vidal*<sup>1</sup>, Fernando Lima<sup>1</sup>, Don Ritter<sup>1</sup> <sup>1</sup>Innovad, Antwerp, Belgium</p>
3:15 PM		<b>Break</b>
4:00 PM	205	<p><b>Effect of increasing deoxynivalenol (DON) contaminated diets containing corn DDGS on growth performance and health of broilers</b></p> <p>Andres F. Bolivar Sierra*<sup>1</sup>, Bree Koepke<sup>1</sup>, Alejandra Forero Salamanca<sup>1</sup>, Ashir Foreman Atoo<sup>1</sup>, Crystal Levesque<sup>2</sup> <sup>1</sup>South Dakota State University, Brookings, South Dakota, United States; <sup>2</sup>South Dakota State University, Brookings, South Dakota, United States</p>

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- 4:15 PM 206 **Environmental stressors amplify aflatoxin B1 toxicity in broilers: implications for risk assessment and mitigation strategies under commercial conditions.**  
Alireza Khadem<sup>2</sup>, Arnau Vidal\*<sup>1</sup>, Don Ritter<sup>1</sup>, Christos Gougoulis<sup>1</sup> <sup>1</sup>Innovad, Antwerp, Belgium; <sup>2</sup>Innovad group, Berchem, Belgium
- 4:30 PM 207 **Locally produced rice distillers dried grains with solubles (RDDGS) as a suitable cost-effective protein ingredient for layer chicken diets**  
Ashen E. Arachchi<sup>25</sup>, Miyuru N. Edirisinghe\*<sup>16S</sup>, T. Jeyaharan<sup>3</sup>, Hasitha Priyashantha<sup>4</sup>, Shishanthi Jayarathna<sup>4</sup>, Saliya Alwis<sup>5</sup>, J.K. Vidanarachchi<sup>2</sup> <sup>1</sup>University of Calgary, Calgary, Alberta, Canada; <sup>2</sup>University of Peradeniya, Peradeniya, Kandy, Sri Lanka; <sup>3</sup>Postgraduate Institute of Agriculture, University of Peradeniya, Peradeniya, Sri Lanka; <sup>4</sup>University of Ruhuna, Mapalana, Kamburupitiya, Sri Lanka; <sup>5</sup>W.M. Mendis (Pvt. Ltd.), Colombo, Sri Lanka
- 4:45 PM 208 **Impact of soybean origin and harvest year on the chemical composition, amino acid profile, and protein quality indicators of soybean meals collected from 2006 to 2025**  
Nereida Luna Corrales<sup>1</sup>, Lourdes Cámara<sup>1</sup>, Guillermo Talegón<sup>1</sup>, Miguel Ángel Ibáñez<sup>1</sup>, Gonzalo González Mateos\*<sup>1</sup> <sup>1</sup>Universidad Politécnica de Madrid, Madrid, Spain

### Extension and Instruction

Moderator: Dervan Bryan, Penn State University

203 (B-D)

- 1:45 PM 209 **Know Your Flock: Audience-Centric Strategies for Extension and Technical Services**  
Chongxiao Chen\*<sup>1</sup> <sup>1</sup>University of Georgia, Athens, Georgia, United States
- 2:15 PM 210 **AI-Assisted Innovation Projects Enhance Applied Problem-Solving in Poultry Science Students**  
Andrew P. Benson\*<sup>1</sup> <sup>1</sup>University of Georgi, Jefferson, Georgia, United States
- 2:30 PM 211 **Development and implementation of an online poultry medicine course for practicing veterinarians**  
Jacqueline P. Jacob\*<sup>1</sup> <sup>1</sup>University of Kentucky, Lexington, Kentucky, United States



## SATURDAY, JULY 11

- 2:45 PM 212 **Development of a Comprehensive Scientific Writing Course for Animal and Poultry Science Undergraduate and Graduate Students**  
Steven C. Ricke\*<sup>1</sup>, Elena G. Olson<sup>2</sup> <sup>1</sup>University of Wisconsin, Madison, Wisconsin, United States; <sup>2</sup>UW-Madison, Madison, Wisconsin, United States
- 3:00 PM 213 **Chickens online: enhancing accessibility and impact of poultry science to youth through virtual and hybrid programming**  
Ashley L. Brooks\*<sup>2,3,4</sup>, Mary Fosnaught<sup>1,2,5</sup> <sup>1</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>2</sup>North Carolina Cooperative Extension, Raleigh, North Carolina, United States; <sup>3</sup>North Carolina Cooperative Extension, New Bern, North Carolina, United States; <sup>4</sup>North Carolina Cooperative Extension, New Bern, North Carolina, United States; <sup>5</sup>North Carolina Cooperative Extension, Raleigh, North Carolina, United States
- 3:15 PM **Break**
- 4:00 PM 214 **Strengthening agricultural literacy through outreach and public engagement at the University of Manitoba's Glenlea Research Station**  
Anna Rogiewicz\*<sup>1,6</sup>, Kate Cummings<sup>2</sup>, Breanna Zwick<sup>2</sup>, Wei Jia<sup>3</sup>, Corry Rybuck<sup>3</sup>, Claire McCaffrey<sup>3</sup>, Gemmar Maramot<sup>4</sup>, Peter Frohlich<sup>5,6</sup>, Crystal Jorgenson<sup>5</sup>, Rob Duncan<sup>5,6</sup> <sup>1</sup>University of Manitoba, Winnipeg, Manitoba, Canada; <sup>2</sup>University of Manitoba, Winnipeg, Manitoba, Canada; <sup>3</sup>Manitoba Egg Farmers, Winnipeg, Manitoba, Canada; <sup>4</sup>University of Manitoba, Winnipeg, Manitoba, Canada; <sup>5</sup>University of Manitoba, Winnipeg, Manitoba, Canada; <sup>6</sup>University of Manitoba, Winnipeg, Manitoba, Canada
- 4:15 PM 215 **Regional Broiler Chicken Mortality Trends in the last 15 years**  
Jose Otavio Sorbara\*<sup>1</sup>, Casey Ritz<sup>2</sup> <sup>1</sup>University of Georgia, Athens, Georgia, United States; <sup>2</sup>University of Georgia, Athens, Georgia, United States
- 4:30 PM 216 **Subclinical coccidiosis and its impact on broiler performance in medicated flocks in Southern Ontario**  
Aline Pereira\*<sup>1</sup>, Ronan Santos<sup>1</sup>, Elizabeth Zeldenrust<sup>1</sup>, Tanka Khanal<sup>1</sup> <sup>1</sup>Grand Valley Fortifiers, Cambridge, Ontario, Canada
- 4:45 PM 217 **Industry-led collaboration to address emerging challenges in egg production and farm management**  
Wei Jia<sup>1</sup>, Corry Rybuck<sup>1</sup>, Claire McCaffrey<sup>1</sup>, Gemmar Maramot<sup>2</sup>, Van Doan<sup>3</sup>, Clay Sawka<sup>3</sup>, Petra Loro<sup>3</sup>, Amy Hawkins Green<sup>3</sup>, Uduak Edet<sup>4</sup>, Qiang Zhang<sup>4</sup>, Anna Rogiewicz\*<sup>5</sup> <sup>1</sup>Manitoba Egg Farmers, Winnipeg, Manitoba, Canada; <sup>2</sup>University of Manitoba, Winnipeg, Manitoba, Canada; <sup>3</sup>Government of Manitoba, Winnipeg, Manitoba, Canada; <sup>4</sup>University of Manitoba, Winnipeg, Manitoba, Canada; <sup>5</sup>University of Manitoba, Winnipeg, Manitoba, Canada



## SATURDAY, JULY 11

- 5:00 PM 218 **Research and Innovation Perspectives: Global Pathways for Poultry Welfare in 2050**  
 Shawna Weimer\*<sup>1</sup>, Elena Myhre<sup>2</sup>, Anne-Marie Neeteson-van-Nieuwenhoven<sup>3</sup>, Rodolfo Arreaga<sup>4</sup>, Kate Barger<sup>5</sup>, Ruth Newberry<sup>6</sup>, Katy Tarrant<sup>7</sup>, Gregory S. Fraley<sup>8</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup>International Poultry Welfare Alliance, Crawfordville, Florida, United States; <sup>3</sup>Aviagen Ltd., Newbridge, United Kingdom; <sup>4</sup>Universidad del Valle de Guatemala, Guatemala City, Guatemala; <sup>5</sup>KB Welfare Consulting, Seneca, North Carolina, United States; <sup>6</sup>Norwegian University of Life Sciences, Ås, Norway; <sup>7</sup>Fresno State, Fresno, California, United States; <sup>8</sup>Purdue University, West Lafayette, Indiana, United States

### Metabolism and Nutrition: Feed Additives I

202 (A-D)

- 1:45 PM 219 **Antibiotic-free poultry production for food security, food safety, and environmental stewardship**  
 Kenny Mnisi\*<sup>1</sup> <sup>1</sup>North-West University, Mafikeng, South Africa
- 2:15 PM 220 **Partial replacement of synthetic vitamin E by olive pulp in broilers: effects on performance, oxidative status, and breast meat quality**  
 CLEMENCE MESSANT\*<sup>1</sup>, Joan Torrent<sup>1</sup>, Ali Kiani<sup>2</sup>, Zoi Skaperda<sup>3</sup>, Michel Prost<sup>4</sup>, Kathrin Buehler<sup>1</sup>, Christos Gougoulias<sup>1</sup> <sup>1</sup>Innovad Group, Berchem, Belgium; <sup>2</sup>Alimetrics Research Oy, Espoo, Finland; <sup>3</sup>Olea Fortius PC, Larissa, Greece; <sup>4</sup>Laboratoire Lara-Spiral, Couternon, France
- 2:30 PM 221 **Effects of mango seed kernel extract on the gut microbiota of broilers following oral gavage**  
 Tuba Riaz<sup>1</sup>, Zafar Hayat\*<sup>1</sup>, Zahid Nasir<sup>2</sup> <sup>1</sup>University of Sargodha, Sargodha, Pakistan, Sargodha, Pakistan; <sup>2</sup>AMZ Consultants Guelph, ON, Canada, Guelph, Ontario, Canada
- 2:45 PM 222 **Exploring the modulatory effects of spotted pumpkin (*Lagenaria breviflora*) fruit aqueous extract on growth performance, behaviour and blood profile of broiler chickens Oluwagbemiga O. Adeleye\*<sup>1</sup>, Ibiyemi O. Opowoye<sup>1</sup>, Adebayo V. Jegede<sup>1</sup>, Adebayo O. Enitan<sup>1</sup> <sup>1</sup>Federal University of Agriculture, Abeokuta, Abeokuta, Ogun State, Nigeria**
- 3:00 PM 223 **Effects of *Astragalus* polysaccharides on growth performance, antioxidant capacity, gut microbiota, and cecal metabolome of yellow-feathered broilers under microplastics exposure**  
 Jie Tang<sup>1</sup>, Yanrong Jing<sup>1</sup>, Lijun Ou<sup>1</sup>, Mengyun Chen<sup>1</sup>, Huihua Zhang<sup>1</sup>, Xin Feng\*<sup>1</sup> <sup>1</sup>Foshan University, Foshan, China
- 3:15 PM **Break**

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## SATURDAY, JULY 11

- 4:00 PM 224 **The effects of a polyherbal formulation versus choline chloride 60% or betaine HCL on broiler growth performance, carcass cuts, and muscle myopathies**  
 Jordyn Studer\*<sup>1</sup>, Dari Brown<sup>1</sup>, Vasuda Kuncham<sup>2</sup>, Deepak Mundkinajeddu<sup>2</sup>, Prashanth D'Souza<sup>2</sup> <sup>1</sup>Barentz North America, Woodbury, Minnesota, United States; <sup>2</sup>Natural Remedies Pvt Limited, Krishnagiri, India
- 4:15 PM 225 **Dietary guanidinoacetic acid supplementation favorably modulates energy dynamics and nitrogen balance in broilers**  
 Nishchal Sharma<sup>1</sup>, Sosthene Musigwa<sup>1</sup>, Vivienne Inhuber<sup>2</sup>, Alip Kumar<sup>1</sup>, Stuart Wilkinson<sup>3</sup>, David Cadogan<sup>3</sup>, Shubiao Wu\*<sup>1</sup> <sup>1</sup>University of New England, Armidale, New South Wales, Australia; <sup>2</sup>AlzChem Trostberg GmbH, Trostberg, Germany; <sup>3</sup>Feedworks Pty Ltd, Romsey, Victoria, Australia
- 4:30 PM 226 **The use of immunoglobulin enriched blood plasma in broiler chicken nutrition to improve growth performance**  
 Bartłomiej Pobudkiewicz<sup>2</sup>, Wiesław Kopec\*<sup>1,2</sup>, Jan Jankowski<sup>3</sup>, Krzysztof Lipinski<sup>3</sup>, Krzysztof Kozłowski<sup>3</sup>, Mariusz Rosiak<sup>2</sup>, Paulina Jawor<sup>1</sup> <sup>1</sup>Wrocław University of Environmental and Life Sciences, Wrocław, Poland; <sup>2</sup>Deveris Polska Ltd., Warszawa, Poland; <sup>3</sup>University of Warmia and Mazury in Olsztyn, Olsztyn, Poland
- 4:45 PM 227 **Validating predictions for AME and digestible arginine sparing of guanidinoacetic acid in protein-reduced broiler diets**  
 Andreas Lemme<sup>1</sup>, Francois Crots<sup>2</sup>, Lukas Bauer<sup>1</sup>, Natasha Davison<sup>3</sup>, Victor D. Naranjo<sup>4</sup>, Vinicius Texeira\*<sup>5</sup> <sup>1</sup>Evonik Operations GmbH, Hanau, Germany; <sup>2</sup>Klipkraal Broiler Research Institute, Derby, South Africa; <sup>3</sup>Evonik Africa (Pty) Ltd., Midrand, South Africa; <sup>4</sup>Evonik Guatemala S.A., Guatemala City, Guatemala; <sup>5</sup>Evonik Brasil Ltda., Sao Paulo, Brazil
- 5:00 PM 228 **Muscadine Grape Pomace Alters Oxidative Stress and Cecal Microbiota Without Affecting Growth in Broilers**  
 Xyonna Carreia<sup>2</sup>, Shafia Tehseen<sup>3</sup>, Oluwatoyin Sangokunle<sup>4</sup>, Samson Oladokun<sup>5</sup>, Ayodeji Aderibigbe\*<sup>1</sup> <sup>1</sup>The Ohio State University, Wooster, Ohio, United States; <sup>2</sup>Florida A and M University, Tallahassee, Florida, United States; <sup>3</sup>University of Agriculture, Faisalabad, Pakistan; <sup>4</sup>Florida A and M University, Tallahassee, Florida, United States; <sup>5</sup>Texas A&M University, College Station, Texas, United States
- 5:15 PM 229 **Assessing a Novel Phytogetic Formulation in Broilers Challenged with Subclinical Enteritis**  
 Karla Lopez\*<sup>1</sup>, Sammy Velapatino<sup>2</sup>, Viviana San Martín<sup>1</sup>, Carlos Vilchez Perales<sup>2</sup>, David Rueda<sup>1</sup>, María Huauya<sup>2</sup>, Wilson López<sup>2</sup>, Eder Taboada<sup>2</sup>, Kendall González<sup>2</sup>, Carol Ponce de Leon<sup>3</sup>, Diego Martinez<sup>4</sup> <sup>1</sup>CKM SAC, Lima, Peru; <sup>2</sup>La Molina National Agrarian University, Lima, Peru; <sup>3</sup>Independent consultant, Fayetteville, Arkansas, United States; <sup>4</sup>University of Arkansas, Fayetteville, AR



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# Sunday, July 12

SCIENTIFIC SESSIONS

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# SUNDAY, JULY 12

## Extension and Education Symposium: The Role of Generative AI and LLMs in Poultry Education, Extension, and Operations

Chair: Andrew Benson, University of Georgi

John W. H. Bassett Theatre

- 9:00 AM 1038S **Artificial Intelligence in Poultry and Agriculture: Practical Applications, Opportunities, and the Future of Work**  
Aidan Connolly\*<sup>1</sup> <sup>1</sup>Agritech Capital, Wilmington, North Carolina, United States
- 10:00 AM 1039S **ExtensionBot: Trusted, Cited Answers for Agricultural Extension Using Generative AI**  
David Warren\*<sup>1</sup> <sup>1</sup>Oklahoma State University, Bixby, Oklahoma, United States
- 10:30 AM 1040S **From Data to Decisions: How Artificial Intelligence is Transforming Poultry Production and Sustainability**  
Padmini Persaud\*<sup>1</sup> <sup>1</sup>Speria, Atlanta, Georgia, United States
- 11:00 AM 1041S **Workshop: Building AI-Powered Teaching Tools: Custom GPTs, NotebookLM, and Emerging AI Workflows for Poultry Education**  
Andrew P. Benson\*<sup>1</sup> <sup>1</sup>University of Georgia, Jefferson, Georgia, United States



## Management and Production Symposium: Poultry Litter Management and the Environment – Where Have We Been and Where are We Going?

Chair: Steven Ricke, University of Wisconsin

105 Constitution Hall

- 9:00 AM **Introduction**
- 9:05 AM 1042S **Commercial Litter and Poultry House Management Strategies**  
Dana K. Dittoe\*<sup>1</sup> <sup>1</sup>University of Wyoming, Laramie, Wyoming, United States
- 9:25 AM 1043S **Assessing Litter Quality: Economics and Management Decisions**  
Luis R. Munoz\*<sup>1</sup>, Johnathon Moon<sup>2</sup> <sup>1</sup>Mississippi State University, Mississippi State, Mississippi, United States; <sup>2</sup>Mississippi State University, Mississippi State, Mississippi, United States





## SUNDAY, JULY 12

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| 9:45 AM  | 1044S | <p><b>Pathogen Occurrence in Poultry Litter</b><br/>           Steven C. Ricke*<sup>1</sup>, Elena G. Olson<sup>2</sup>, Brett Hale<sup>3</sup> <sup>1</sup>University of Wisconsin, Madison, Wisconsin, United States; <sup>2</sup>UW-Madison, Madison, Wisconsin, United States; <sup>3</sup>Agri Gro, Inc., Doniphan, Missouri, United States</p>                                                                                                                                                                                                                   |
| 10:05 AM |       | <b>Break</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 10:35 AM | 1045S | <p><b>Poultry Litter as an Ecological Archive: From Bird-Environment Interactions to Ecological Intervention</b><br/>           Elena G. Olson*<sup>1,2</sup>, Steven C. Ricke<sup>3</sup>, Brett Hale<sup>4</sup> <sup>1</sup>UW-Madison, Madison, Wisconsin, United States; <sup>2</sup>Supreme EGO LLC, Middleton, Wisconsin, United States; <sup>3</sup>University of Wisconsin, Madison, Wisconsin, United States; <sup>4</sup>AgriGro, Inc, Doniphan, Missouri, United States</p>                                                                                |
| 10:55 AM | 1046S | <p><b>Applications of 16S sequencing for profiling the poultry litter microbiome- an industry perspective</b><br/>           Brett Hale*<sup>1</sup>, Elena G. Olson<sup>2</sup>, Steven C. Ricke<sup>3</sup> <sup>1</sup>AgriGro, Inc, Doniphan, Missouri, United States; <sup>2</sup>UW-Madison, Madison, Wisconsin, United States; <sup>3</sup>University of Wisconsin, Madison, Wisconsin, United States</p>                                                                                                                                                       |
| 11:15 AM | 1047S | <p><b>Comprehensive biosurveillance: tracking DNA and RNA pathogens using shotgun metagenomic sequencing of environmental samples</b><br/>           Jake Byrnes*<sup>1</sup>, Cassandra Ettinger<sup>1</sup>, Elena G. Olson<sup>2</sup>, Genevieve Roberts<sup>1</sup>, Steven C. Ricke<sup>3</sup>, Michael Rhys<sup>1</sup>, Casey McGinley<sup>1</sup> <sup>1</sup>Barnwell Bio Inc., San Diego, California, United States; <sup>2</sup>UW-Madison, Madison, Wisconsin, United States; <sup>3</sup>University of Wisconsin, Madison, Wisconsin, United States</p> |
| 11:35 AM |       | <b>Panel Discussion</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

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## Metabolism and Nutrition: Vitamins and Minerals I

Moderator: Reza Akbari Moghaddam Kakhki, Université de Montréal

206 (A-D)

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| 9:00 AM | 230 | <p><b>Advancing Robust Calcium and Phosphorus Nutrition in Modern Poultry</b><br/>           Marie Pierre Létourneau-Montminy*<sup>1</sup>, Agnes Narcy<sup>2</sup> <sup>1</sup>Iaval university, Québec, Quebec, Canada; <sup>2</sup>INRAE, Nouzilly, France</p> |
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## SUNDAY, JULY 12

- 9:30 AM 231 **Digestible Calcium Based Diet Formulation Maintains Broiler Performance Across Limestone Sources with Varying Solubility**  
L.eon Marchal\*<sup>1</sup>, Ceinwen Evans<sup>1</sup>, Yueming dersjant-li<sup>1</sup>, Ellen v. Eerden<sup>3</sup>, Vanessa Lagos<sup>3</sup>, Kyle M. Venter<sup>2</sup>, K. Gibbs<sup>1</sup>  
<sup>1</sup>IFF, Oestgeest, Zuid Holland, Netherlands; <sup>2</sup>Neuro Livestock Research, Brits, South Africa; <sup>3</sup>Schothorst Feed research, Lelystad, Netherlands
- 9:45 AM 232 **Whole body composition in broiler chickens fed low available phosphorus corn and soybean meal-based diets supplemented with doses of monocalcium phosphate or *E. coli* phytase**  
Florence W. Nyaga\*<sup>1GS</sup>, Sylvester Mutinda<sup>2</sup>, Felix Njeri<sup>3</sup>, marie-pierre letourneau montminy<sup>4</sup>, Xuerong Song<sup>5</sup>, Li Xu<sup>5</sup>, Xiuyi Wu<sup>5</sup>, Elijah G. Kiarie<sup>6</sup>  
<sup>1</sup>University, Guelph, Ontario, Canada; <sup>2</sup>University of Guelph, Guelph, Ontario, Canada; <sup>3</sup>University of Guelph, Guelph, Ontario, Canada; <sup>4</sup>Laval University, Québec, Quebec, Canada; <sup>5</sup>Wuhan Sunhy Biology Co., Ltd, Wuhan, Hubei, China; <sup>6</sup>University of Guelph, Guelph, Ontario, Canada
- 10:00 AM 233 **1,25-Dihydroxycholecalciferol glycoside improves feed efficiency and intestinal immune response of broilers at 42 days of age**  
Ricardo V. Nunes\*<sup>1</sup>, Thiago d. Andrade<sup>1</sup>, Nilton Rohloff Junior<sup>1</sup>, Cinthia Eyng<sup>2</sup>, Matheus L. Maia<sup>1</sup>, Eduarda M. Henz<sup>1</sup>, Nathalia Borsatto<sup>1</sup>, Gabriel N. Comin<sup>1</sup>, Maria E. Costa Curta<sup>1</sup>, Joao Augusto W. Mello<sup>1</sup>, Gabrieli Toniazco<sup>1</sup>  
<sup>1</sup>Western Paraná State University, Marechal Cândido Rondon, PR, Brazil; <sup>2</sup>Western Paraná State University, Marechal Cândido Rondon, Paraná, Brazil
- 10:15 AM 234 **25 Hydroxyvitamin D3 in broiler nutrition: effects on performance, bone quality, and plasma vitamin D3 status**  
Xaviere Rousseau<sup>1</sup>, Anssi Kerko<sup>2</sup>, Ali Kiani<sup>2</sup>, Craig Wyatt<sup>1</sup>, Alexandre B. Brito\*<sup>1</sup>  
<sup>1</sup>AB Vista, São Paulo, São Paulo, Brazil; <sup>2</sup>Alimetrics, Espoo, Finland
- 10:30 AM 235 **Dietary 25Hydroxyvitamin D3 maintains Vitamin D activation pathways and improve organ resilience during an induced renal and hepatic stress in broiler chickens**  
Estefania Perez Calvo<sup>1</sup>, Jérôme Schmeisser<sup>1</sup>, Jonathon Howard<sup>1</sup>, Barbara Dupovec<sup>1</sup>, Carlos Lozano-Poveda\*<sup>1</sup>  
<sup>1</sup>dsm-firmenich, Kaiseraugst, Switzerland
- 10:45 AM 236 **Aspartate-chelated copper maintains broiler growth performance at reduced copper levels under natural coccidial exposure**  
Jing Yuan\*<sup>1</sup>, Zonghua Qin<sup>1</sup>, Xiangyi Xu<sup>1</sup>, Xianfeng Peng<sup>1</sup>  
<sup>1</sup>Guangzhou Insighter Biotechnology Co., Ltd, Guangzhou, Guangdong, China



## SUNDAY, JULY 12

- 11:00 AM 498 **Transcriptomic Evidence of the Mechanism of Action of Bis-Chelated Copper in Broiler Chickens**  
 Maria C. Walsh\*<sup>1</sup>, Hugo Romero-Sanchez<sup>2</sup>, Abidemi Adekova<sup>2</sup>, Melanie Roux<sup>2</sup>, Laura M. Payling<sup>1</sup>, Luis F. Romero<sup>1</sup> <sup>1</sup>*Biofractal, Kilkenny, Ireland*; <sup>2</sup>*Novus International, Wake Forest, North Carolina, United States*

### Immunology, Health and Disease: Health and Disease

Moderator: Samson Oladokun, Texas A&M University

206 (E-F)

- 9:00 AM 237 **The Avian Organoid Biobank: A versatile platform for modeling infectious diseases in poultry**  
 Yuhua Z. Farnell\*<sup>1</sup> <sup>1</sup>*Texas A&M University, College Station, Texas, United States*
- 9:30 AM 238 **Fumonisin B1-induced hepatotoxicity in broilers through gut microbiota-liver axis dysregulation-mediated ferroptosis: ameliorative effects of selenium nanoparticles**  
 Dessalegn Lamesgen\*<sup>1,2GS</sup>, Zhiyuan Xia<sup>1</sup>, Niel A. Karrow<sup>3</sup>, Meng Liu<sup>1</sup>, Lv-Hui Sun<sup>1</sup> <sup>1</sup>*Huazhong Agricultural University, Wuhan, Hubei, China*; <sup>2</sup>*Assosa University, Assosa, Benshangul Gumuze, Ethiopia*; <sup>3</sup>*University of Guelph, Guelph, Ontario, Canada*
- 9:45 AM 239 **One drop of blood is enough to perform indirect and competitive ELISA tests**  
 Rafael Forero<sup>1</sup>, Mohammad Amawi<sup>2</sup>, Marina Gaimard<sup>1</sup>, Chloé Redal<sup>2</sup>, Stéphanie Lesceu<sup>2</sup>, Tarik Sulejmanovic\* <sup>1</sup>*IDvet INC, Hampton, New Hampshire, United States*; <sup>2</sup>*Innovative Diagnostics, Grabels, France*
- 10:00 AM 240 **Zinc-Induced Molting Modulates Oxidative and Health Biomarkers in White Leghorn Hens**  
 Musadiq Idrees<sup>3</sup>, Haseeb Anwar\*<sup>1,2</sup> <sup>1</sup>*Charles Sturt University, NSW, Australia, Wagga Wagga, New South Wales, Australia*; <sup>2</sup>*Government College University, Faisalabad, Punjab, Pakistan*; <sup>3</sup>*The Islamia University of Bahawalpur, Bahawalpur, Punjab, Pakistan*
- 10:15 AM 241 **Vaccination monitoring and DIVA strategy for Infectious Bursal Disease**  
 Rafael Forero<sup>1</sup>, Stéphanie Lesceu<sup>1</sup>, Chloé Redal<sup>1</sup>, Jean-Emmanuel Drus<sup>1</sup>, Catherine Lefebvre<sup>1</sup>, Marianne Zorbas<sup>1</sup>, Philippe Pourquier<sup>1</sup>, Tarik Sulejmanovic\*<sup>1</sup> <sup>1</sup>*Innovative Diagnostics, Hampton, New Hampshire, United States*



## SUNDAY, JULY 12

- 10:30 AM 242 **Evaluation of Increasing Doses of an Attenuated *Eimeria* Vaccine, Evant®, on Broiler Growth Performance and Gut Health: Establishing an In Vivo Coccidiosis-Challenge Model**  
Cecile Gayraud\*<sup>1</sup>, Maria Mendoza<sup>2</sup>, Beatriz Gutierrez<sup>3</sup>, Ruben Miranda<sup>3</sup> <sup>1</sup>*Evonik Operations GmbH, Hanau-Wolfgang, Germany;* <sup>2</sup>*Evonik Corporation, Kennesaw, Georgia, United States;* <sup>3</sup>*Research Barn Leon, Onzonilla, Spain*
- 10:45 AM 243 **Modeling Spotty Liver Disease and *Campylobacter hepaticus* infection in Leghorn Hens**  
Matthew K. Jones\*<sup>2</sup>, Roel Becerra<sup>1</sup>, Catherine Logue<sup>1</sup>, Charles L. Hofacre<sup>2</sup>, Jennie Baxter<sup>2</sup> <sup>1</sup>*University of Georgia, College of Veterinary Medicine, Athens, Georgia, United States;* <sup>2</sup>*Southern Poultry Research Group, Inc., Watkinsville, Georgia, United States*
- 11:00 AM 244 **Electron Beam-Killed Bacterial Vaccine as an Innovative Approach to Prevent Bacterial Chondronecrosis with Osteomyelitis Lameness in Broiler Chickens**  
Adnan Alrubaye\*<sup>1</sup>, Ruvindu Perera<sup>2</sup>, Palmy Jesudhasan<sup>3</sup> <sup>1</sup>*University of Arkansas, Fayetteville, Arkansas, United States;* <sup>2</sup>*University of Arkansas, Fayetteville, Arkansas, United States;* <sup>3</sup>*USDA-ARS, Fayetteville, Arkansas, United States*
- 11:15 AM 245 **Reused litter shapes the early cecal microbiota succession and the immune cells distribution in layer chickens**  
Nimra Khalid\*<sup>1</sup>, Shuja Majeed<sup>1</sup>, Bikas R. Shah<sup>1</sup>, Ali Nazmi<sup>1,2</sup> <sup>1</sup>*The Ohio State University, Wooster, Ohio, United States;* <sup>2</sup>*The Ohio State University, Columbus, Ohio, United States*
- 11:30 AM 246 **The poultry-wildlife interface: opportunities for biosecurity breaches and interspecies pathogen transmission**  
Giulia Graziosi\*<sup>1</sup>, Caterina Lupini<sup>1</sup>, Gloria Garavini<sup>2</sup>, Giacomo Trevisani<sup>2</sup>, Geremia Dosa<sup>3</sup>, Alessandro Mannelli<sup>4</sup>, Elena Catelli<sup>1</sup> <sup>1</sup>*University of Bologna, Ozzano dell'Emilia, Italy;* <sup>2</sup>*Veterinary Services of Eurovo Group, Imola, Bologna, Italy;* <sup>3</sup>*Complex Operative Unit of Veterinary Hygiene, Imola, Bologna, Italy;* <sup>4</sup>*University of Torino, Grugliasco, Torino, Italy*
- 11:45 AM 247 **Environmental source tracking of H5N1 in Alberta: linking migratory waterfowl to commercial poultry outbreaks (2022–2025)**  
Muhammad Farooq\*<sup>1</sup>, Ahmed Ali<sup>1</sup>, Noel Ritson-Bennett<sup>2</sup>, Dayna Goldsmith<sup>3</sup>, Ashish Gupta<sup>3</sup>, Sylvia Checkley<sup>1</sup>, Yohannes Berhane<sup>2</sup>, Mohamed F. Abdul-Careem<sup>1</sup> <sup>1</sup>*University of Calgary, Calgary, Alberta, Canada;* <sup>2</sup>*National Centre for Foreign Animal Disease (NCFAD), Winnipeg, Manitoba, Canada;* <sup>3</sup>*University of Calgary Faculty of Veterinary Medicine, clinical skills building (CSB), Calgary, Alberta, Canada*



# SUNDAY, JULY 12

## Management and Production I

Moderator: Samuel Mwangi, North Carolina State University

205 (A-D)

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| 9:00 AM  | 248 | <p><b>Post Peak Adaptation of Lohmann LSL-LITE Hens to Delayed Nest Box Introduction</b><br/> Dervan Bryan*<sup>1</sup>, Xavia A. Harris<sup>1</sup>, Stephanie A. Ansah<sup>1</sup>, Patrick Tamatey<sup>1</sup> <sup>1</sup><i>Penn State University, State college, Pennsylvania, United States</i></p>                                                                                                                                                                                                                                                                                                         |
| 9:30 AM  | 249 | <p><b>Economic Viability and Nutritional Efficiency of Phytase Supplementation in Diets with Varying Phosphorus Levels for Commercial Laying Hens</b><br/> Sara E. Benavides Martínez*<sup>1</sup>, Byron Xavier Munoz<sup>1</sup>, Mario Lopes<sup>1</sup>, Claudio Ximenes<sup>1</sup>, Cayo Pereira<sup>1</sup>, Isabela Maimone<sup>1</sup>, Maria A. Joaquin<sup>1</sup>, Cristiane S. Araújo<sup>2</sup>, Lucio F. Araujo<sup>1</sup><br/> <sup>1</sup><i>University of Sao Paulo, Pirassununga, Sao Paulo, Brazil;</i><br/> <sup>2</sup><i>University of Sao Paulo, Pirassununga, Sao Paulo, Brazil</i></p> |
| 9:45 AM  | 250 | <p><b>Can hen performance be affected by lighting uniformity and degree of nest enclosure?</b><br/> Valentina Bongiorno<sup>1</sup>, Kathryn Baugh<sup>2</sup>, Cara Robison<sup>1</sup>, Janice Siegford*<sup>1</sup> <sup>1</sup><i>Michigan State University, East Lansing, Michigan, United States;</i> <sup>2</sup><i>Michigan State University, Holt, Michigan, United States</i></p>                                                                                                                                                                                                                        |
| 10:00 AM | 251 | <p><b>Effect of Heat Stress and biofortified Orange Corn during pullet rearing on early egg production</b><br/> Sara Cloft*<sup>1</sup>, Evan Rocheford<sup>2</sup>, Torbert Rocheford<sup>3</sup>, Darrin M. Karcher<sup>4</sup> <sup>1</sup><i>Purdue University, West Lafayette, Indiana, United States;</i> <sup>2</sup><i>NutraMaize, West Lafayette, Indiana, United States;</i> <sup>3</sup><i>Purdue University, West Lafayette, Indiana, United States;</i> <sup>4</sup><i>Purdue University, West Lafayette, Indiana, United States</i></p>                                                              |
| 10:15 AM | 252 | <p><b>Effects of Stocking Density on Welfare, Egg Quality, and Production of Cage-Free Laying Hens in Multi-Tiered Aviaries</b><br/> Alexandra Ulans*<sup>1</sup>, Kenneth E. Anderson<sup>1</sup>, Lin Walker<sup>2</sup>, Dannica Wall<sup>1</sup>, Allison Pullin<sup>3</sup> <sup>1</sup><i>North Carolina State University, Raleigh, North Carolina, United States;</i> <sup>2</sup><i>NC State University, Raleigh, North Carolina, United States;</i> <sup>3</sup><i>North Carolina State University, Raleigh, North Carolina, United States</i></p>                                                        |
| 10:30 AM | 253 | <p><b>A method for comparing mathematically modeled fertility and hatchability curves</b><br/> Martin Zuidhof*<sup>1</sup>, Thiago L. Noetzold<sup>1</sup>, Mark Polak<sup>1</sup> <sup>1</sup><i>University of Alberta, Edmonton, Alberta, Canada</i></p>                                                                                                                                                                                                                                                                                                                                                         |

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## SUNDAY, JULY 12

- 10:45 AM 254 **Eggshell translucency, age related structural changes, and their combined impact on hatch of fertile eggs in commercial broiler breeder flocks**  
 Cristiano Bortoluzzi\*<sup>6</sup>, Jinqun Wang<sup>2</sup>, Jia Zhen<sup>2</sup>, Leticia Orellana<sup>3</sup>, Matthew Hughes<sup>3</sup>, Ken Macklin<sup>3</sup>, Chongxiao Chen<sup>4</sup>, Adam Davis<sup>4</sup>, Chance Williams<sup>5</sup>, Austin Jasek<sup>16</sup>, Colwayne Morris<sup>6</sup>, Raquel Burin<sup>6</sup>, Duarte Neves<sup>6</sup> <sup>1</sup>Zinpro, College Station, Texas, United States; <sup>2</sup>Auburn University, Auburn, Alabama, United States; <sup>3</sup>Mississippi State University, Starkville, Mississippi, United States; <sup>4</sup>University of Georgia, Athens, Georgia, United States; <sup>5</sup>Wayne-Sanderson Farms, Hoschtou, Georgia, United States; <sup>6</sup>Zinpro Corporation, Conyers, Georgia, United States

### Metabolism and Nutrition: Feed Additives II

202 (A-D)

- 9:00 AM 255 **EFFECT OF EXOGENOUS ENZYMES SUPPLEMENTATION IN FERMENTED SOYBEAN MEAL BASED DIET ON GROWTH PERFORMANCE, NUTRIENT DIGESTIBILITY AND CARCASS CHARACTERISTICS OF BROILERS**  
 Rehan Amjad<sup>2</sup>, Riaz Mustafa<sup>1</sup>, Umar Farooq<sup>1</sup>, Waseem Abbas<sup>2</sup>, Muhammad Farooq Khalid<sup>1</sup>, Abdur Rehman<sup>23</sup>, Munawar Hussain<sup>4</sup>, Asfa Fatima<sup>2</sup>, Muhammad Aziz ur Rahman\*<sup>2</sup>  
<sup>1</sup>Constituent College Toba Tek Singh, University of Agriculture Faisalabad, Faisalabad 38000, Pakistan, Faisalabad, Pakistan; <sup>2</sup>Institute of Animal and Dairy Sciences, University of Agriculture Faisalabad, Faisalabad 38000, Pakistan, Faisalabad, Pakistan; <sup>3</sup>Department of Animal Sciences, Faculty of Agriculture, Sargodha University, Sargodha 40100, Pakistan, Sargodha, Pakistan; <sup>4</sup>Sind Feed and Allied Products, Karachi 75600, Pakistan, Karachi, Pakistan
- 9:15 AM 256 **Reduction of liver injury and fibrosis induced by carbon-tetrachloride in chickens supplemented with artichoke extract, lemon essential oil and silymarin**  
 Frank Ayala\*<sup>1</sup>, Freddy Farfan<sup>1</sup>, Eliana Icochea<sup>2</sup>, Lenin Maturrano<sup>4</sup>, Guillermo Tellez-Isaias<sup>3</sup> <sup>1</sup>Laboratorios Drogavet, Lima, Peru; <sup>2</sup>Laboratory of Avian Pathology, Faculty of Veterinary Medicine, Universidad Nacional Mayor de San Marcos, Lima, Peru; <sup>3</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>4</sup>Laboratory of Biology and Molecular Genetics, Faculty of Veterinary Medicine, Universidad Nacional Mayor de San Marcos, Lima, Peru



## SUNDAY, JULY 12

- SUN**
- 9:30 AM 257 **Dietary protein source and Salmonella modulate cecal monoamine oxidase activity in chickens**  
Samiru Wickramasuriya<sup>1</sup>, Sungyong Jung<sup>2</sup>, Joshua M. Lyte\*<sup>1</sup>  
<sup>1</sup>USDA-ARS Poultry Production and Product Safety Research Unit, Fayetteville, Arkansas, United States; <sup>2</sup>South Dakota State University, Brookings, South Dakota, United States
- 9:45 AM 258 **Cross-model chemical and cellular modulation of oxidative stress by olive pulp: comparison with vitamin E forms**  
CLEMENCE MESSANT\*<sup>1</sup>, Zoi Skaperda<sup>2</sup>, Kathrin Buehler<sup>1</sup>, Periklis Vardakas<sup>3</sup>, Fotis Tekos<sup>3</sup>, Demetrios Kouretas<sup>4</sup>, Christos Gougoulis<sup>1</sup> <sup>1</sup>Innovad Group, Berchem, Belgium; <sup>2</sup>Olea Fortius PC, Larissa, Greece; <sup>3</sup>Foodoxys PC, Larissa, Greece; <sup>4</sup>Department of Biochemistry and Biotechnology, Larissa, Greece
- 10:00 AM 259 **Influence of oregano-derived essential oil (Ecodiar®) supplementation on production performance, egg quality, and egg income in late-phase laying hens**  
Kenneth E. Anderson\*<sup>2</sup>, Ishab Poudel<sup>1</sup>, Rebecca Wysocky<sup>3</sup>, M D. Cabrera<sup>4</sup>, Gabriel Cabrera<sup>4</sup>, Rafael A. Cabrera<sup>4</sup> <sup>1</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>2</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>3</sup>NC State University, Raleigh, North Carolina, United States; <sup>4</sup>NUTRINAE LLC, Palo Alto, California, United States Minor Outlying Islands
- 10:15 AM 260 **Astaxanthin Improves Systemic Stress Responses and Jejunal Barrier Integrity in Aged Laying Hens Under Summer Heat Stress**  
Uchekukwu E. Obianwuna\*<sup>1</sup>, Habtamu A. Kasahun<sup>1</sup>, Vivian U. Oleforuh-Okoleh<sup>2</sup>, Asnan Muhammad<sup>1</sup>, Ghazanfar Hussain<sup>1</sup>, Pan Pan Ji<sup>1</sup>, Qiu Kai<sup>1</sup>, Shugeng Wu<sup>1</sup> <sup>1</sup>Institute of Feed Research, Chinese Academy of Agricultural Sciences, Beijing, China; <sup>2</sup>Rivers State University, Nkpolu-Oroworukwo, Port Harcourt, Nigeria, Port Harcourt, Rivers, Nigeria
- 10:30 AM 261 **Effects of natural feed additives and antibiotics on bone strength, organ weights, and gut morphology in late-phase laying hens**  
Venuste Maniraguha<sup>4</sup>, Ahmed El-zenary\*<sup>1,2</sup>, Deborah Adewole<sup>3</sup>  
<sup>1</sup>University of Saskatchewan, Saskatoon, Saskatchewan, Canada; <sup>2</sup>University of Sadat City, Sadat City, Menofia, Egypt; <sup>3</sup>University of Saskatchewan, Saskatoon, Saskatchewan, Canada; <sup>4</sup>University of Saskatchewan, Saskatoon, Saskatchewan, Canada



## SUNDAY, JULY 12

- 10:45 AM 262 **Feed supplementation with a Triple-Strain *Bacillus*-based probiotic improves performance and leg skin condition in turkeys**  
 Pawel Konieczka\*<sup>1,3</sup>, Laura Hoving<sup>2</sup>, Bartosz Skalski<sup>2</sup>, Krzysztof Kozlowski<sup>1</sup>, Antoine Meuter<sup>2</sup> <sup>1</sup>University of Warmia and Mazury in Olsztyn, Olsztyn, Poland; <sup>2</sup>Novonesis Biologiens, Kongens Lyngby, Denmark; <sup>3</sup>The Kielanowski Institute of Animal Physiology and Nutrition, Polish Academy of Sciences, Jablonna, Poland
- 11:00 AM 263 **Study on the Effect and Related Mechanism of *Rosa Roxburghii* Tratt Extract in Alleviating Hyperuricemia in Magang Geese**  
 Yang Fu\*<sup>1</sup>, Yinghua Song<sup>1</sup>, Yang Fu<sup>1</sup>, Rui Li<sup>1</sup>, Xiaodan Luo<sup>1</sup>, Jihan Jiang<sup>1</sup>, Wence Wang<sup>1</sup> <sup>1</sup>South China Agricultural University, Guangzhou, China

## Metabolism and Nutrition: General Nutrition II

Moderator: Anna Rogiewicz, University of Manitoba

### 201 (A-F)

- 9:00 AM 264 **Evaluation of Brown Rice (At 362) as an alternative energy source to corn for growth performance, intestinal morphology, and nutrient digestibility in Broiler Chickens**  
 T Jeyaharan<sup>1</sup>, Miyuru Nimsara<sup>2</sup>, Oshani C. Warnapurage\*<sup>2</sup>, J.K. Vidanarachchi<sup>3</sup>, S.P. Kodithuwakku<sup>3</sup>, W.N. Perera<sup>3</sup>, N Priyankarage<sup>4</sup>, C Palliyaguru<sup>5</sup> <sup>1</sup>Postgraduate Institute of Agriculture, University of Peradeniya, Peradeniya, Sri Lanka, Peradeniya, Sri Lanka; <sup>2</sup>Faculty of Veterinary Medicine, University of Calgary, Calgary, Alberta, Canada; <sup>3</sup>Faculty of Agriculture, University of Peradeniya, Peradeniya, Central, Sri Lanka; <sup>4</sup>Faculty of Veterinary Medicine and Animal Science, University of Peradeniya, Peradeniya, Central, Sri Lanka; <sup>5</sup>Veterinary Research Institute, Gannoruwa, Peradeniya, Peradeniya, Central, Sri Lanka
- 9:15 AM 265 **Influence of the origin of the soybean meal on protein and amino acid digestibility in broiler diets**  
 Mateo Lucio<sup>1</sup>, Guillermo Talegón<sup>1</sup>, Lewis Aguirre<sup>2</sup>, Lourdes Cámara<sup>1</sup>, Rosa Lázaro<sup>1</sup>, Gonzalo González Mateos\*<sup>1</sup>  
<sup>1</sup>Universidad Politécnica de Madrid, Madrid, Spain; <sup>2</sup>Trouw Nutrition, Toledo, Toledo, Spain
- 9:30 AM 266 **Increasing dietary inclusion of two faba bean (*Vicia faba*) varieties differing in their vicine and convicine contents: Effects on broiler growth performance and carcass traits**  
 Matt Oryschak\*<sup>1</sup>, Doug Korver<sup>1,2</sup> <sup>1</sup>University of Alberta, Edmonton, Alberta, Canada; <sup>2</sup>Alpine Poultry Nutrition, Inc., Edmonton, Alberta, Canada



## SUNDAY, JULY 12

- SUN**
- 9:45 AM 267 **Impacts of enzymatically-processed soybean meal inclusion on poult performance intestinal morphology, and intestinal permeability**  
Dawn Koltes\*<sup>1</sup>, Brooke Wilson<sup>1</sup>, Cameron F. Hall<sup>1</sup>, Grady Fain<sup>2</sup>, Megan Bible<sup>2</sup> <sup>1</sup>Iowa State University, Ames, Iowa, United States; <sup>2</sup>Hamlet Protein, Findlay, Ohio, United States
- 10:00 AM 268 **Increasing dietary inclusion of two faba bean (*Vicia faba*) varieties differing in condensed tannin content: Effects on broiler growth performance and carcass traits**  
Matt Oryschak\*<sup>1</sup>, Doug Korver<sup>12</sup> <sup>1</sup>University of Alberta, Edmonton, Alberta, Canada; <sup>2</sup>Alpine Poultry Nutrition, Inc., Edmonton, Alberta, Canada
- 10:15 AM 269 **Mechanism of Fermented Bamboo Powder Regulating Growth Performance and Meat Quality in Magang Geese via the Microbiota-Amino Acid Metabolic Axis**  
Xue Li\*<sup>1</sup>, Guorong Song<sup>1</sup>, Xinyuan Peng<sup>1</sup>, Shuo Yang<sup>1</sup>, Rui Liang<sup>1</sup>, Zijie Li<sup>1</sup>, Wence Wang<sup>1</sup> <sup>1</sup>South China Agriculture University, Guangzhou, China
- 10:30 AM 270 **Effects of palm kernel cake and decanter cake combinations on growth performance, carcass traits, growth and nutrient transporter gene expression and breast meat composition in broiler chickens**  
Mohammad Naeem Azizi\*<sup>1</sup>, Teck Chwen Loh<sup>12</sup>, Lim Teik Chung Eric<sup>12</sup>, Faris Ab Aziz Mohammad<sup>1</sup>, Hooi Ling Foo<sup>34</sup> <sup>1</sup>Universiti Putra Malaysia (UPM), Serdang, Selangor, Malaysia; <sup>2</sup>Institutes of Tropical Agriculture and Food Security, Serdang, Selangor, Malaysia; <sup>3</sup>Universiti Putra Malaysia (UPM), Serdang, Selangor, Malaysia; <sup>4</sup>Institute of Bioscience, Serdang, Selangor, Malaysia
- 10:45 AM 271 **Effects of roasting on nutritional characteristics of Peanut Skin (PS) and potentials in animal feed formulation in Sub-Saharan Africa**  
Johnson A. Olupona\*<sup>1</sup>, Olubukola Lawrence-Azua<sup>1</sup> <sup>1</sup>Federal College of Animal Health and Production Technology, Ibadan, Ibadan, Oyo, Nigeria
- 11:00 AM 273 **Fermented Orange Peel Improved Productive Performance, Immune Status, and Hormonal Responses in Aged Laying Hens**  
Pan Pan Ji<sup>12</sup>, Ghazanfar Hussain<sup>1</sup>, Shugeng Wu<sup>1</sup>, Qiu Kai<sup>1</sup>, Uchechukwu E. Obianwuna\*<sup>1</sup> <sup>1</sup>Institute of Feed Research, CAAS, Beijing, China; <sup>2</sup>Hebei Normal University of Science and Technology, Hebei, China



# SUNDAY, JULY 12

## Microbiology and Food Safety I

Moderator: Paul WALIAULA, University of Guelph

203 (B-D)

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| 10:00 AM | 274 | <p><b>Antimicrobial Resistance and Control of Non-Typhoidal <i>Salmonella enterica</i> in Poultry: A “One-Health” Perspective.</b><br/> Moussa S. Diarra*<sup>1</sup> <sup>1</sup>Agriculture and Agri-Food Canada, Professor, Ontario, Canada</p>                                                                                                                                                                                                                                                          |
| 10:30 AM | 275 | <p><b>Impact of simulated transport of rear-in place pullets on the persistence of <i>Salmonella</i> Enteritidis in a cage-free production system.</b><br/> Javier S. Garcia*<sup>21</sup>, Richard K. Gast<sup>21</sup> <sup>1</sup>USDA-ARS, Athens, Georgia, United States; <sup>2</sup>USDA-ARS, Athens, Georgia, United States</p>                                                                                                                                                                     |
| 10:45 AM | 276 | <p><b>Comparison of Two <i>Salmonella</i> Serotypes Following Albumen or Yolk Inoculation of Hatching Eggs Cold-Stored and Incubated to Day 18</b><br/> Caitlin Harris*<sup>1</sup>, Vivienne Catt<sup>2</sup>, Olga Kemenova<sup>2</sup>, Christopher A. Heist<sup>2</sup>, Daniel Sabo<sup>2</sup>, Stephanie Richter<sup>2</sup> <sup>1</sup>USDA-ARS National Poultry Research Center, Athens, Georgia, United States; <sup>2</sup>Georgia Tech Research Institute, Atlanta, Georgia, United States</p> |
| 11:00 AM | 277 | <p><b>Biocide tolerance and eggshell transfer of <i>Salmonella</i> Enteritidis biofilms</b><br/> Daniel Mayboca Padilla*<sup>1GS</sup>, Claudia Narvaez Bravo<sup>1</sup>, Wei Jia<sup>2</sup>, Argenis Rodas Gonzalez<sup>1</sup>, Tim McAllister<sup>3</sup> <sup>1</sup>University of Manitoba, Winnipeg, Manitoba, Canada; <sup>2</sup>Manitoba Egg Farmers, Winnipeg, Manitoba, Canada; <sup>3</sup>Agriculture and Agri-Food Canada, Lethbridge, Alberta, Canada</p>                                  |

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## SUNDAY, JULY 12

- SUN**
- 11:15 AM 278 **Can extracellular particles from different *Bacillus* spp. strains contribute to inhibitory and synergistic activities against *Salmonella* Heidelberg strains isolated from poultry?**  
Isabelle E. Pedrosa<sup>1</sup>, Ana Carolina P. Sousa<sup>1</sup>, Patrícia G. Hoepers<sup>\*3</sup>, Simone Sommerfeld<sup>1</sup>, Hebreia O. Almeida<sup>2</sup>, Mario M. Martins<sup>2</sup>, Éric Guédon<sup>6</sup>, Victor A. Penha<sup>5</sup>, Vasco Azevedo<sup>4</sup>, Belchiolina Beatriz Fonseca<sup>12</sup> <sup>1</sup>Postgraduate Program in Veterinary Sciences at the Federal University of Uberlândia, Uberlândia-MG, Brazil, Uberlândia, Brazil; <sup>2</sup>cPostgraduate Program in Genetics and Biochemistry at the Federal University of Uberlândia, Uberlândia-MG, Brazil, Uberlândia, Brazil; <sup>3</sup>Seara, Itajaí, Brazil; <sup>4</sup>Postgraduate Program in Bioinformatics at the Federal University of Minas Gerais, Belo Horizonte, Brazil; <sup>5</sup>Department of Integrative Biology, Michigan State University, East Lansing, Michigan, United States; <sup>6</sup>gSTLO, INRAE, Institut Agro, Rennes, France
- 11:30 AM 279 **LitterGuard AI: An Early-Warning Machine Learning Platform for Predicting Salmonella Risk in Commercial Broiler Houses**  
Adelumola Oladeinde<sup>\*1</sup>, Taejung Chung<sup>1</sup>, Jodie P. Lawrence<sup>1</sup>, Josh Payne<sup>2</sup>, Zaid Abdo<sup>3</sup> <sup>1</sup>USDA-ARS, Athens, Georgia, United States; <sup>2</sup>C & S Chemicals, Roswell, Georgia, United States; <sup>3</sup>Colorado State University, Fort Collins, Colorado, United States
- 11:45 AM 280 **Differences in *Campylobacter* detachment and death as a function of PAA concentration and exposure time on broiler meat**  
Elizabeth A. McMillan<sup>\*1</sup>, Chandra Kothapalli<sup>2</sup>, Daniel S Munther<sup>3</sup> <sup>1</sup>USDA-ARS, USNPRC, Athens, Georgia, United States; <sup>2</sup>Cleveland State University, Cleveland, Ohio, United States; <sup>3</sup>Cleveland State University, Cleveland, Ohio, United States

## Metabolism and Nutrition: Vitamins and Minerals II

Moderator: Reza Akbari Moghaddam Kakhki, Université de Montréal

206 (A-D)

- 1:00 PM 281 **Microencapsulated vitamins and trace minerals maintain broiler growth performance under reduced inclusion levels**  
Peter R. Ferket<sup>\*2</sup>, Dimitri Malheiros<sup>1</sup>, Ludovic Lahaye<sup>1</sup>, Glenmer B. Tactacan<sup>1</sup>, Dan Moore<sup>3</sup>, Jean Fontaine<sup>1</sup> <sup>1</sup>Jefo Nutrition, Saint-Hyacinthe, Quebec, Canada; <sup>2</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>3</sup>Colorado Quality Research, Wellington, Colorado, United States



## SUNDAY, JULY 12

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| 1:15 PM | 282 | <p><b>Micro-Encapsulation Of All Six Trace Minerals To Reduce Inclusion While Maintaining Performance And Carcass Traits Of Broiler</b></p> <p>Kevin Liu<sup>*12</sup> <sup>1</sup>Retiree, Singapore, Singapore; <sup>2</sup>Syno Int. P/L, Select Account Ownership, Singapore</p>                                                                                                                                                                                                                                                              |
| 1:30 PM | 283 | <p><b>Assessment of organic chromium supplementation on performance, intestinal integrity, bone mineralization, and meat quality parameters in broiler chickens subjected to experimental cyclic heat stress</b></p> <p>Andressa S. Stein<sup>1</sup>, Roberto Senas<sup>1</sup>, Clay Maynard<sup>1</sup>, Casey M. Owens<sup>1</sup>, Guillermo Tellez-Isaias<sup>1</sup>, Danielle Graham<sup>1</sup>, Billy M. Hargis<sup>1</sup>, Juan D. Latorre<sup>*1</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States</p> |
| 1:45 PM | 285 | <p><b>Effects of Hydroxychloride and Organic Trace Mineral Nutrition on Eggshell Ultrastructure and Quality in Late-Cycle Laying Hens</b></p> <p>Hernan D. Gil Arenas<sup>*1</sup>, Carlos A. Maya Ortega<sup>2</sup> <sup>1</sup>Alura, Medellín, Colombia; <sup>2</sup>Iluma Alliance, Medellín, Colombia</p>                                                                                                                                                                                                                                   |
| 2:00 PM | 286 | <p><b>Determining the Effects of KemTRACE® Chromium on Turkey Performance</b></p> <p>Karen Vignale<sup>*1</sup> <sup>1</sup>Kemin Industries, Fayetteville, Arkansas, United States</p>                                                                                                                                                                                                                                                                                                                                                           |

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### Immunology, Health and Disease: Immunology

Moderator: Alexander Yitbarek, University of Delaware

206 (E-F)

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| 1:00 PM | 287 | <p><b>The One Health implication of <i>Enterococcus</i> in poultry production</b></p> <p>Nitish Boodhoo<sup>*1</sup> <sup>1</sup>McGill University, Ste. Anne de Bellevue, Quebec, Canada</p>                                                                                                                                                                                                             |
| 1:30 PM | 288 | <p><b>Modulation of cytokine production from avian T-cells by vitamin D metabolites</b></p> <p>Veronika Drexler<sup>2</sup>, Marina Kohn<sup>2</sup>, Kathrin Bühler<sup>*1</sup>, Jan Dirk van der Klis<sup>1</sup>, Bernd Kaspers<sup>2</sup> <sup>1</sup>Herbonis Animal Health GmbH (Innovad Group), Augst BL, Switzerland; <sup>2</sup>Veterinary Faculty, University of Munich, Munich, Germany</p> |



## SUNDAY, JULY 12

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| 1:45 PM | 289 | <p><b>Chicken blood alloantigen system H is encoded by the CD146 (MCAM) gene</b></p> <p>Robert L. Taylor, Jr.*<sup>1</sup>, Amy McCarron<sup>2</sup>, Anna Wolc<sup>2,3</sup>, Brandi Sparling<sup>4</sup>, Janet Fulton<sup>2</sup> <sup>1</sup><i>West Virginia University, Morgantown, West Virginia, United States</i>; <sup>2</sup><i>Hy-Line International, Dallas Center, Iowa, United States</i>; <sup>3</sup><i>Iowa State University, Ames, Iowa, United States</i>; <sup>4</sup><i>Western University of Health Sciences, Pomona, California, United States</i></p> |
| 2:00 PM | 290 | <p><b>Impact of environmental cyclic heat stress on blood leukocyte profiles of modern random-bred and divergent high- and low-water conversion broiler breeder hens</b></p> <p>Jossie M. Santamaria<sup>1</sup>, Allison D. Weaver*<sup>1</sup>, Rosie Whittle<sup>1</sup>, Karen M. Rivera<sup>1</sup>, Gisela F. Erf<sup>1</sup>, Sara Orłowski-Workman<sup>1</sup>, Walter G. Bottje<sup>1</sup>, Shawna Weimer<sup>1</sup> <sup>1</sup><i>University of Arkansas System Division of Agriculture, Fayetteville, Arkansas, United States</i></p>                            |
| 2:15 PM | 291 | <p><b>Nutritional energy deficiency alters humoral immunity in broiler chicks</b></p> <p>Chrysta N. Beck*<sup>1</sup>, Jossie M. Santamaria<sup>2</sup>, Seth Hufford<sup>2</sup>, Gisela F. Erf<sup>2</sup>, Benjamin Parsons<sup>2</sup> <sup>1</sup><i>Mississippi State University, Mississippi State, Mississippi, United States</i>; <sup>2</sup><i>University of Arkansas System Division of Agriculture, Fayetteville, Arkansas, United States</i></p>                                                                                                                 |
| 2:30 PM | 292 | <p><b>Broilers grown in the absence of adults have lifelong deficiencies in serum IgY and cecal SCFA levels compared to chicks exposed at hatch to adult bacteria</b></p> <p>Nir Ben Porat<sup>2</sup>, Lian Nashif<sup>2</sup>, Erez Mills*<sup>1</sup> <sup>1</sup><i>Hebrew University of Jerusalem, Rehovot, Israel</i>; <sup>2</sup><i>The Robert H. Smith Faculty of Agriculture, Hebrew University of Jerusalem, Rehovot, Israel</i></p>                                                                                                                                |

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## Management and Production II

*Moderator: Samuel Mwangi, North Carolina State University*

205 (A-D)

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|---------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 PM | 293 | <p><b>Interaction between photoperiod and mash diet energy levels on broiler performance</b></p> <p>Tory Shynkaruk*<sup>1</sup>, Nancy Fischer<sup>2</sup>, Karen Schwean-Lardner<sup>1</sup> <sup>1</sup><i>University of Saskatchewan, Saskatoon, Saskatchewan, Canada</i>; <sup>2</sup><i>Country Junction Feeds, Wetaskiwin, Alberta, Canada</i></p> |
|---------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



## SUNDAY, JULY 12

- 1:15 PM 294 **Insights from a comparative life cycle analysis of bacterial xylanase supplementation to advance sustainable broiler production**  
 Prince Agyemang\*<sup>1GS</sup>, Lisa Dufour<sup>2</sup>, Virgine Martin<sup>6</sup>, Raquel S. Garcia<sup>3</sup>, Micheal Steck<sup>5</sup>, Melissa Otis<sup>6</sup>, Ludovic Lahaye<sup>4</sup> <sup>1</sup>*McGill University, Sainte Anne-de-Bellevue, Quebec, Canada;* <sup>2</sup>*Jefo Europe, Carquefou, Nantes, France;* <sup>3</sup>*Belfeed, Andenne, Namur, Belgium;* <sup>4</sup>*Jefo Nutrition Inc, St Hyacinthe, Quebec, Canada;* <sup>5</sup>*Glimpact, New York, New York, United States;* <sup>6</sup>*Jefo Nutrition Inc., St Hyacinthe, Quebec, Canada*
- 1:30 PM 295 **Broiler sampling strategies for estimation of mean body weight**  
 Federico Etcheverry\*<sup>1</sup>, Muhammad Ali<sup>1</sup>, Nicolas M. Abaunza<sup>1</sup>, Chongxiao Chen<sup>2</sup> <sup>1</sup>*University of Georgia, Athens, Georgia, United States;* <sup>2</sup>*University of Georgia, Athens, Georgia, United States*
- 1:45 PM 296 **Broiler breeder feathering between 45 and 60 weeks of age is affected by target body weight and the length of the starter feed period**  
 Edgar O. Oviedo\*<sup>1</sup>, Gabriele J. Kinchin<sup>1</sup>, Artur De Freitas Ribeiro<sup>1</sup>, Shivaram K. Rao<sup>2</sup>, Jesus Arango<sup>2</sup> <sup>1</sup>*NC STATE UNIVERSITY, Raleigh, North Carolina, United States;* <sup>2</sup>*Cobb Genetics, Siloam Springs, Arkansas, United States*
- 2:00 PM 297 **Ultraviolet (UV-A) light effects on welfare and performance in slower-growing broilers**  
 Carolin Adler\*<sup>1</sup>, Jerine A. J. van der Eijk<sup>2</sup>, Henk Gunnink<sup>2</sup>, Rick A. van Emous<sup>3</sup>, Ingrid de Jong<sup>2</sup> <sup>1</sup>*University of Saskatchewan, Saskatoon, Saskatchewan, Canada;* <sup>2</sup>*Wageningen Livestock Research, Wageningen, Netherlands;* <sup>3</sup>*Wageningen Livestock Research, Wageningen, Netherlands*
- 2:15 PM 298 **Replacement of Soybean meal with Black Soldier Fly (*Hermetia illucens*) larvae meal on growth performance and meat quality traits of broiler chickens**  
 Md. S. Sarker\*<sup>125</sup>, US Ety<sup>21</sup>, S Faruque<sup>1</sup>, F Tabassum<sup>2</sup>, SS Zihan<sup>4</sup>, MF Sharmin<sup>31</sup>, PS Hossain<sup>5</sup> <sup>1</sup>*Bangladesh Livestock Research Institute, Dhaka, Dhaka, Bangladesh;* <sup>2</sup>*Bangladesh Livestock Research Institute, Dhaka, Bangladesh;* <sup>3</sup>*Bangladesh Jute Research Institute, Dhaka, Bangladesh;* <sup>4</sup>*Nourish Poultry & Hatchery Ltd, Dhaka, Shariatpur, Bangladesh;* <sup>5</sup>*Greensect Ltd., Dhaka, Tejgaon, Bangladesh*
- 2:30 PM 299 **Optimizing Feed Withdrawal Duration to Modulate Physiological Responses of Broilers During Heat Stress in a Tropical Environment**  
 Oyegunle E. Oke\*<sup>1</sup>, Aderanti I. Oni<sup>2</sup> <sup>1</sup>*Federal University of Agriculture, Abeokuta, Nigeria, Abeokuta, Ogun, Nigeria;* <sup>2</sup>*Federal University of Agriculture Abeokuta, Abeokuta, Ogun, Nigeria*



# SUNDAY, JULY 12

2:45 PM 300 **Effects of Medical Plants on rectal temperature, respiratory rate, blood parameters, and intestinal histology in broilers exposed to a heat wave (37°C).**  
 Zeinab M. Mahasneh\*<sup>1,2</sup>, Mohannad Abuajamieh<sup>2</sup>, Anas Abdelqader<sup>2</sup>, Mohamed Abedal-Majed<sup>2</sup>, Mohmmad Al-Qaisi<sup>2</sup>, Mufeed Alnimer<sup>2</sup>, Abdur-Rahman Al-Fataftah<sup>2</sup> <sup>1</sup>Jerash university, Jerash, Jordan; <sup>2</sup>The University of Jordan, Amman, Jordan

## Metabolism and Nutrition Symposium: The Technologies and Nutritional Strategies that are Making Precision Nutrition an Affordable Reality

Chair: Maria Walsh, Biofractal

105 Constitution Hall

1:00 PM **Panel Discussion**

1:45 PM 1048S **Global Industry Trends to Shape the Future of Global and U.S. Broiler Production**  
 Nan-Dirk Mulder\*<sup>1</sup> <sup>1</sup>Rabobank, Utrecht, Netherlands

2:10 PM 1049S **The Dynamics of Amino Acid Nutrition in Lean Deposition in Broilers**  
 Justina Caldas\*<sup>1</sup> <sup>1</sup>Aviagen, Huntsville, Alabama, United States

2:35 PM 1050S **Navigating the competing metabolic demands of growth and immune competency & the consequences of getting it wrong**  
 Rami A. Dalloul\*<sup>1</sup> <sup>1</sup>University of Georgia, Athens, Georgia, United States

3:00 PM **Break**

3:30 PM 1051S **Precision animal performance diagnostics - how the combined strengths of animal gene expression and advanced AI are helping poultry producers unlock performance gains**  
 Luis F. Romero\*<sup>1</sup>, Maria C. Walsh<sup>2</sup> <sup>1</sup>Biofractal, Loule, Faro, Portugal; <sup>2</sup>Biofractal, Loule, Select a state, Portugal

4:00 PM 1052S **Precision feeding of functional ingredients for lean muscle and immunocompetency**  
 Samuel Rochell\*<sup>1</sup> <sup>1</sup>Auburn University, Auburn, Alabama, United States

4:30 PM 1053S **Exploring the role that feed additives play in precision nutrition**  
 Brooke Humphrey\*<sup>1</sup> <sup>1</sup>NutriQuest, Maple Grove, Minnesota, United States

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# SUNDAY, JULY 12

## Symposium: Methodology Matters

Chair: Roselina Angel,

John W. H. Bassett Theatre

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|---------|-------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1:00 PM | 1054S | <p><b>Why methodologies are important in scientific work as well as for application of scientific information commercially?</b><br/> Paul B. Tillman*<sup>1</sup> <sup>1</sup><i>Poultry Technical Nutrition Services LLC, Buford, Georgia, United States</i></p>                                                                                                                                                                                                                                                                                                                                                                |
| 1:10 PM | 1055S | <p><b>Consideration of mineral homeostasis when conducting calcium nutrition work in poultry</b><br/> Laura E. Ellestad*<sup>1</sup> <sup>1</sup><i>University of Georgia, Athens, Georgia, United States</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                |
| 1:35 PM | 1056S | <p><b>Broiler calcium digestibility work. Importance of length of studies, timing of sampling, nutrient interactions in experimental diet formulation in the context of calcium homeostasis</b><br/> Roselina Angel*<sup>2</sup>, Kyle M. Venter<sup>1</sup>, Peter Plumstead<sup>3</sup> <sup>1</sup><i>Neuro Livestock Research, Lanseria, South Africa;</i> <sup>2</sup><i>University of Maryland, College Park, Maryland, United States;</i> <sup>3</sup><i>Neuro Livestock Research, Lanseria, South Africa</i></p>                                                                                                         |
| 2:05 PM | 1057S | <p><b>Layer calcium digestibility work. Importance of length of studies, timing of sampling nutrient interactions in experimental diet formulation in the context of calcium homeostasis.</b><br/> Kyle M. Venter*<sup>1,2</sup>, Kean G. Jacobs<sup>1</sup>, Roselina Angel<sup>4</sup>, Peter Plumstead<sup>3</sup> <sup>1</sup><i>Neuro Livestock Research, Lanseria, South Africa;</i> <sup>2</sup><i>University of Pretoria, Pretoria, Gauteng, South Africa;</i> <sup>3</sup><i>Neuro Livestock Research, Lanseria, South Africa;</i> <sup>4</sup><i>University of Maryland, College Park, Maryland, United States</i></p> |
| 2:35 PM | 1058S | <p><b>Importance of research facility set up. Uniformity trials and understanding power analysis and facility capabilities</b><br/> Nicki Tillman*<sup>1</sup> <sup>1</sup><i>Nutritional Statistics LLC, Buford, Georgia, United States</i></p>                                                                                                                                                                                                                                                                                                                                                                                 |
| 3:00 PM |       | <b>Break</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 3:30 PM | 1059S | <p><b>Importance of methods selected for microbiome studies: State of the science and challenges</b><br/> Joshua M. Lyte*<sup>1</sup>, Monika Proszkowiec-Weglarz<sup>2</sup> <sup>1</sup><i>USDA-ARS Poultry Production and Product Safety Research Unit, Fayetteville, Arkansas, United States;</i> <sup>2</sup><i>USDA, ARS, Beltsville, Maryland, United States</i></p>                                                                                                                                                                                                                                                      |



## SUNDAY, JULY 12

3:55 PM 1060S **Necessary validation steps too often neglected in the use of immunoassays**

Tom Porter\*<sup>1</sup> *University of Maryland, College Park, Maryland, United States*

4:20 PM **Panel Discussion**

### Microbiology and Food Safety II

Moderator: Paul WALIAULA, *University of Guelph*

203 (B-D)

1:00 PM 301 **Host–Diet–Pathogen Crosstalk: Shaping the Future of Poultry Gut Health**

Wageha Awad\*<sup>1</sup> *Clinic for poultry Medicine, Vienna, Austria*

1:15 PM 302 **Dietary Fiber Modulates Caecal Microbiota Dysbiosis and Enhances Intestinal Barrier Integrity in Broiler Chickens Infected with *Campylobacter jejuni***

Bereket Dessalegn Awoke\*<sup>1</sup>, Motuma Debelo<sup>1</sup>, Nicola Palmieri<sup>2</sup>, Károly Dublec<sup>2</sup>, Michael Hess<sup>1</sup>, Wageha Awad<sup>1</sup> *Clinic for poultry and Fish Medicine, Vienna, Austria; <sup>2</sup>Institute of Physiology and Nutrition, Keszthely, Hungary*

1:30 PM 303 **Effects of Chronic Exposure to Dietary Mycotoxins on Cecal Microbiota, Short-Chain Fatty Acids, and Predicted Functional Pathways in Broiler Chickens**

Revathi Shanmugasundaram\*<sup>1</sup>, Laharika Kappari<sup>2</sup>, Anthony E. Glenn<sup>3</sup>, Ramesh Selvaraj<sup>2</sup>, Todd J. Applegate<sup>4</sup> *<sup>1</sup>USDA, ARS, Athens, Georgia, United States; <sup>2</sup>University of Georgia, Athens, Georgia, United States; <sup>3</sup>USDA ARS, Athens, Georgia, United States; <sup>4</sup>University of Georgi, Athens, Georgia, United States*

1:45 PM 304 **Comparing performance and microbiota of laying hens fed US and European style diets between 35 and 45 weeks of life**

Jean E. De Oliveira\*<sup>1</sup>, Lieske v. Eck<sup>1</sup>, Luisa A. Gene<sup>1</sup>, Anne Goderis<sup>1</sup>, Ines Carvalho<sup>1</sup>, Carlos Brasil<sup>1</sup>, Jilau Yan<sup>1</sup> *<sup>1</sup>Cargill Animal Nutrition and Health, Wayzata, Minnesota, United States*

2:00 PM 305 **Microbial diversity and succession associated with poultry processing stages**

Tomi Obe\*<sup>1,2</sup>, Li Zhang<sup>3</sup>, Eniola Betiku<sup>1</sup> *<sup>1</sup>University of Arkansas Division of Agriculture, Fayetteville, Arkansas, United States; <sup>2</sup>University of Arkansas Division of Agriculture, Fayetteville, Arkansas, United States; <sup>3</sup>Mississippi State University, Mississippi State, Mississippi, United States*



## SUNDAY, JULY 12

- 2:15 PM 306 **Potential of probiotic *Bacillus* and *Escherichia coli* strains to acquire resistance to aminoglycosides and quinolones under selective conditions**  
 Anna Luiza F. Strack<sup>2</sup>, Bianca d. Silva<sup>1</sup>, Patrícia G. Hoepers\*<sup>1</sup>, Eduarda G. Sousa<sup>3</sup>, Vasco Azevedo<sup>3</sup>, Belchiolina Beatriz Fonseca<sup>4</sup> <sup>1</sup>Federal University of Uberlandia, Itajaí, Santa Catarina, Brazil; <sup>2</sup>Federal University of Uberlândia (Graduate Program in Genetics and Biochemistry), Uberlandia, Brazil; <sup>3</sup>Federal University of Minas Gerais, Uberlandia, Brazil; <sup>4</sup>Universidade Federal de Uberlândia, Uberlândia, MG, Brazil
- 2:30 PM 307 **Comparison of the infectivity of cattle adapted Highly Pathogenic Avian Influenza (HPAI) virus to Low Pathogenic Avian Influenza (LPAI) virus in a food matrix**  
 Casey Johnson<sup>1</sup>, Brian Ladman<sup>2</sup>, Marcella Murphy<sup>2</sup>, Peter Mann<sup>2</sup>, Lauren Sauble<sup>2</sup>, Poonam Vinayamohan<sup>3</sup>, Anna Porto-Fett<sup>3</sup>, John Luchansky<sup>3</sup>, Ryan Arsenault\*<sup>1</sup> <sup>1</sup>USDA ARS FFSRU, College Station, Texas, United States; <sup>2</sup>University of Delaware, Newark, Delaware, United States; <sup>3</sup>USDA ARS ERRC, Wyndmoor, Pennsylvania, United States

## Animal Well-Being and Behavior

Moderator: Alexandra Harlander, University of Guelph

206 (E-F)

- 3:30 PM 308 **White hens are from Venus, Brown hens are from Mars**  
 Tina Widowski\*<sup>1</sup> <sup>1</sup>University of Guelph, Guelph, Ontario, Canada
- 4:00 PM 309 **Dopaminergic manipulation affects vocalizations but does not elicit feather pecking behavior in Pekin ducks**  
 Jenna M. Schober\*<sup>1</sup>, Nina Wilson<sup>1</sup>, Collette Plue<sup>1</sup>, Gregory S. Fraley<sup>1</sup> <sup>1</sup>Purdue University, Frankfort, Indiana, United States
- 4:15 PM 310 **Effect of replacing string-tied straw enrichment bales with plastic wrapped bales on broiler behaviour and welfare**  
 Emily Burton\*<sup>1</sup> <sup>1</sup>Nottingham Trent University, Nottingham, United Kingdom
- 4:30 PM 311 **A comparison of nest use in four cage-free system designs for laying hens**  
 Suzanne T. Millman\*<sup>1,2</sup>, Rebecca L. Parsons<sup>1</sup>, Brett Ramirez<sup>3</sup>, Anna Johnson<sup>4</sup>, Juan P. Steibel<sup>4</sup> <sup>1</sup>Iowa State University, Ames, Iowa, United States; <sup>2</sup>Iowa State University, Ames, Iowa, United States; <sup>3</sup>Iowa State University, Ames, Iowa, United States; <sup>4</sup>Iowa State University, Ames, Iowa, United States



## SUNDAY, JULY 12

- 4:45 PM 312 **From worms to welfare: Can inducing play behavior give us a window into chick welfare?**  
Rosie Whittle\*<sup>1</sup>, Sara Orłowski-Workman<sup>1</sup>, Maricela Maqueda<sup>1</sup>, Shawna Weimer<sup>1</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States

### Metabolism and Nutrition: Enzymes I

Moderator: Oluylinka Olukosi, University of Georgia

201 (A-F)

- 3:30 PM 313 **Pushing the Limits of Carbohydrase: Do Fiber and XOS Deliver?**  
Shravani Veluri\*<sup>1</sup> <sup>1</sup>Asahi Biosciences, Peachtree City, Georgia, United States
- 4:00 PM 314 **Effect of  $\beta$ -mannanase application on the growth performance and immune response of turkeys**  
Pawel Konieczka\*<sup>1</sup>, Elke von Heimendahl<sup>2</sup>, Anna Fickler<sup>2</sup>, Adebayo Sokale<sup>3</sup>, Krzysztof Kozłowski<sup>1</sup> <sup>1</sup>University of Warmia and Mazury in Olsztyn, Olsztyn, Poland; <sup>2</sup>BASF SE, Ludwigshafen am Rhein, Germany; <sup>3</sup>BASF Corporation, Florham Park, New York, United States
- 4:15 PM 315 **In-feed supplementation of a new mannanase improves turkey growth and improves jejunal barrier integrity at day 49 through enhancement of stress- and immune-response**  
Adebayo Sokale<sup>2</sup>, Ayodeji Aderibigbe\*<sup>1</sup>, Dan Moore<sup>3</sup>, Anna Fickler<sup>2</sup>, Sami Dridi<sup>4</sup> <sup>1</sup>The Ohio State University, Wooster, Ohio, United States; <sup>2</sup>BASF SE, Ludwigshafen, Germany; <sup>3</sup>Colorado Quality Research, Wellington, Colorado, United States; <sup>4</sup>University of Arkansas, Fayetteville, Arkansas, United States
- 4:30 PM 316 **Feeding the microbiome: xylanase supplementation in early life broilers**  
Sasha van der Klein\*<sup>1</sup>, D. Kand<sup>1</sup>, S. Abdallah<sup>2</sup>, A. Huerta<sup>1</sup>, Q. Wang<sup>3</sup>, S. Bialkowski<sup>3</sup>, Alexander Yitbarek<sup>2</sup>, Leon Marchal<sup>1</sup>, K. Gibbs<sup>1</sup> <sup>1</sup>Danisco Animal Nutrition & Health, Oegstgeest, Select One..., Netherlands; <sup>2</sup>University of Delaware, Newark, Delaware, United States; <sup>3</sup>IFF, Wilmington, Delaware, United States
- 4:45 PM 317 **The effect of xylanase supplementation on performance, digesta viscosity, carcass traits, and immune organ of broiler fed wheat based diets**  
Xuerong Song\*<sup>1</sup>, Chongxiao Chen<sup>2</sup> <sup>1</sup>Wuhan Sunhy Biology Co., Ltd, Wuhan, Hubei, China; <sup>2</sup>University of Georgia, Athens, Georgia, United States



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# Monday, July 13

SCIENTIFIC SESSIONS

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# MONDAY, JULY 13

## Metabolism and Nutrition: Enzymes II

Moderator: *Oluyinka Olukosi, University of Georgia*

201 (A-F)

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|---------|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:00 AM | 318 | <p><b>Bacterial xylanase supplementation improves early feed efficiency, intestinal integrity, nutrient digestibility, and cecal microbiota in broilers fed reduced-energy diets</b></p> <p>Olufemi O. Babatunde*<sup>1</sup>, Akaradet Seemacharoensri<sup>1</sup>, Glenmer B. Tactacan<sup>1</sup>, Ludovic Lahaye<sup>1</sup>, Christelle Boudry<sup>2</sup>, Benjaphorn Phusathian<sup>3</sup>, Yuwares Ruangpanit<sup>3</sup> <sup>1</sup><i>Jefo Nutrition Inc., St Hyacinthe, Quebec, Canada;</i> <sup>2</sup><i>Belfeed NV, Andenne, Belgium;</i> <sup>3</sup><i>Kasetsart University, Nakhon Pathom, Thailand</i></p> |
| 8:15 AM | 319 | <p><b>Bio-optimized xylanase improves feed efficiency in broilers fed energy-reduced corn–soybean meal diets</b></p> <p>Rasha Qudsieh<sup>1</sup>, Koushik De<sup>1</sup>, Anna Fe Rose Perino<sup>1</sup>, Sudipto Haldar<sup>2</sup>, Amrita Dhara<sup>2</sup>, Sayantani Arora<sup>2</sup>, Hugo Romero-Sanchez*<sup>3</sup> <sup>1</sup><i>Novus International, Inc, Raleigh, North Carolina, United States;</i> <sup>2</sup><i>Agrivet Research &amp; Advisory P Ltd, Kolkata, India;</i> <sup>3</sup><i>Novus International, Wake Forest, North Carolina, United States</i></p>                                          |
| 8:30 AM | 320 | <p><b>Selective effects of a protease treatment on trypsin inhibitor activity and inhibitor fractions in soybean meal.</b></p> <p>Carolina Haubert Franceschi*<sup>1</sup>, Mauricio S. Cunha<sup>1</sup>, Eduardo Treviso<sup>1</sup>, Janet Remus<sup>1</sup>, Ceinwen Evans<sup>1</sup>, L.eon Marchal<sup>1</sup> <sup>1</sup><i>IFF, São Paulo, SP, Brazil</i></p>                                                                                                                                                                                                                                                        |
| 8:45 AM | 321 | <p><b>Multi-component protease mitigates the negative impacts of under- and over-processed soybean meal on growth performance and carcass characteristics in broilers</b></p> <p>Glenmer B. Tactacan*<sup>1</sup>, Olufemi Babatunde<sup>1</sup>, Ludovic Lahaye<sup>1</sup>, Shahram Golzar Adabi<sup>2</sup> <sup>1</sup><i>Jefo Nutrition, Inc., Saint-Hyacinthe, Quebec, Canada;</i> <sup>2</sup><i>Avesa Nutrition, Baglica, Ankara, Turkey</i></p>                                                                                                                                                                       |
| 9:00 AM | 322 | <p><b>Effects of increasing dietary non-phytate phosphorus levels and phytase supplementation on performance, and apparent ileal nutrient digestibility in broiler chickens</b></p> <p>Sunday A. Adedokun*<sup>1</sup>, Sammad F. Olayiwola<sup>1</sup>, Taiwo J. Alabi<sup>2</sup>, Michael J. Ford<sup>1</sup>, Jacqueline P. Jacob<sup>1</sup> <sup>1</sup><i>University of Kentucky, Lexington, Kentucky, United States;</i> <sup>2</sup><i>University of Kentucky, Lexington, Kentucky, United States</i></p>                                                                                                             |
| 9:15 AM | 323 | <p><b>The effects of copper source and dose on ileal Ca and P digestibility and phytase enzyme efficacy in broilers</b></p> <p>Peter Plumstead*<sup>1</sup>, Kyle M. Venter<sup>1,2</sup>, Jorja Ashworth<sup>1,2</sup>, Alessandra R. Monteiro<sup>3</sup> <sup>1</sup><i>Neuro Livestock Research, Lanseria,</i></p>                                                                                                                                                                                                                                                                                                         |



## MONDAY, JULY 13

- South Africa; <sup>2</sup>University of Pretoria, Pretoria, South Africa;  
<sup>3</sup>Animine Precision Minerals, Annecy, France
- 9:30 AM 324 **Total replacement of added inorganic phosphate by a consensus bacterial 6-phytase in pullet from day 1 till 18 weeks of age**  
Abiodun Bello\*<sup>1</sup>, Vivian Vieira<sup>2</sup>, Ellie Shoosmith<sup>1</sup>, Yueming dersjant-li<sup>1</sup>, K. Gibbs<sup>1</sup>, Ceinwen Evans<sup>1</sup>, Douglas Korver<sup>2</sup> <sup>1</sup>Danisco Animal Nutrition & Health - IFF, Rochester, New York, United States; <sup>2</sup>University of Alberta, Edmonton, Alberta, Canada
- 9:45 AM 325 **Growth performance of layer pullets supplemented with phytase and a plant-based vitamin D3 source from 0 to 18 weeks of age**  
Vivian Vieira\*<sup>1</sup>, Abiodun Bello<sup>2</sup>, Yueming dersjant-li<sup>2</sup>, Kathrin Bühler<sup>3</sup>, Jan Dirk van der Klis<sup>3</sup>, Doug Korver<sup>1</sup> <sup>1</sup>University of Alberta, Edmonton, Alberta, Canada; <sup>2</sup>Danisco Animal Nutrition & Health, IFF, Oegstgeest, Netherlands; <sup>3</sup>Herbonis Animal Health GmbH, Augst BL, Switzerland
- 10:00 AM **Break**
- 10:30 AM 326 **Substrate-specific activity of invertase preparations and their efficacy in galactooligosaccharides degradation in plant feed ingredients for poultry**  
Yanxing Niu\*<sup>1</sup>, Robert Patterson<sup>2</sup>, Bogdan A. Slominski<sup>1</sup>, Anna Rogiewicz<sup>1</sup> <sup>1</sup>University of Manitoba, Winnipeg, Manitoba, Canada; <sup>2</sup>CBS Bio Platforms Inc., Calgary, Alberta, Canada
- 10:45 AM 327 **Glucose oxidase, probiotic and their combination to replace AGP in broiler under tropical condition**  
Xuerong Song\*<sup>1</sup>, Ying Zhou<sup>1</sup>, Xiuyi Wu<sup>1</sup> <sup>1</sup>Wuhan Sunhy Biology Co., Ltd, Wuhan, Hubei, China
- 11:00 AM 328 **Evaluation of a multienzymatic product on laying hen productive performance and tibia mineral content.**  
Sergio R. Fernandez\*<sup>1</sup>, Ignacio Davila<sup>2</sup>, Ezequiel Rosales<sup>3</sup> <sup>1</sup>SRF Poultry Nutrition Solutions LLC, Cypress, Texas, United States; <sup>2</sup>ENZIQUIM, Mexico City, Mexico; <sup>3</sup>CIANA S.A. de C.V., Tepatitlan, Jalisco, Mexico
- 11:15 AM 329 **Evaluation of several feed enzymes options on laying hen productive performance and tibia and femur mineral content.**  
Sergio R. Fernandez\*<sup>1</sup>, Xianfeng Yao<sup>2</sup>, Ezequiel Rosales<sup>3</sup>, Esteban Aguilera<sup>2</sup> <sup>1</sup>SRF Poultry Nutrition Solutions LLC, Cypress, Texas, United States; <sup>2</sup>SUNTAQ INTERNATIONAL LIMITED, Guangzhou, Huangpu Dist., China; <sup>3</sup>CIANA S.A. de C.V., Tepatitlan, Jalisco, Mexico



## MONDAY, JULY 13

- 11:30 AM 330 **Ahiflower seed and press cake, with or without multi-enzyme supplementation: influence on nutrient digestibility and gut development in broiler chickens**  
Ann Lawrence-Azua<sup>1</sup>, Roseline Ogory<sup>\*1</sup>, Deborah Adewole<sup>1</sup>  
<sup>1</sup>University of Saskatchewan, Saskatoon, Saskatchewan, Canada

### Presidential Symposium: The State of the Art in Poultry Bone Biology

Chair: Doug Korver, Alpine Poultry Nutrition, Inc.

John W. H. Bassett Theatre

- 8:00 AM 1061S **Introduction and issues in bone metabolism in poultry**  
Doug Korver<sup>\*1</sup> <sup>1</sup>Alpine Poultry Nutrition, Inc., Edmonton, Alberta, Canada
- 8:15 AM 1062S **Genetic factors affecting bone metabolism**  
Martin Johnsson<sup>\*1</sup> <sup>1</sup>Swedish University of Agricultural Sciences, Uppsala, Sweden
- 8:50 AM 1063S **Physiological regulation of calcium and phosphorus homeostasis in poultry**  
Laura E. Ellestad<sup>\*1</sup> <sup>1</sup>University of Georgia, Athens, Georgia, United States
- 9:25 AM 1064S **Impact of reproductive status on bone physiology in laying hens**  
Grégory Y. Bédécarrats<sup>\*1</sup>, Alexander Chattoe<sup>1</sup>, Ana K. Rentsch<sup>2</sup>  
<sup>1</sup>University of Guelph, Guelph, Ontario, Canada; <sup>2</sup>University of Guelph, Guelph, Ontario, Canada
- 10:00 AM **Break**
- 10:30 AM 1065S **Effects of using digestible calcium for layers and broilers**  
Roselina Angel<sup>\*2</sup>, Kyle M. Venter<sup>1</sup>, Peter Plumstead<sup>3</sup> <sup>1</sup>Neuro Livestock Research, Lanseria, South Africa; <sup>2</sup>University of Maryland, College Park, Maryland, United States; <sup>3</sup>Neuro Livestock Research, Lanseria, South Africa
- 11:05 AM 1066S **Endogenous and exogenous phytase effects on P utilization in poultry**  
Markus Rodehutschord<sup>\*1</sup> <sup>1</sup>University of Hohenheim, Stuttgart, Germany

MON



# MONDAY, JULY 13

## Processing and Products

Moderator: Yagya Adhikari, Auburn University & Tomi Obe, University of Arkansas

203 (B-D)

- 8:15 AM 331 **Processing Innovation and Technology: Industry Impacts and Opportunities**  
Casey M. Owens\*<sup>1</sup> *University of Arkansas, Fayetteville, Arkansas, United States*
- 8:45 AM 332 **The protective effect of different condiment recipes on marinated duck meat against the production of carcinogenic PAHs during natural gas grilling.**  
Imran Mukhtar<sup>2</sup>, Sana Saleem<sup>2</sup>, Haseeb Anwar\*<sup>1,2</sup> *Charles Sturt University, NSW, Australia, Wagga Wagga, New South Wales, Australia; <sup>2</sup>Government College University, Faisalabad, Punjab, Pakistan*
- 9:00 AM 333 **Deep learning-based automated detection method for eggshell spotting traits**  
Jiajie Yang<sup>1</sup>, Zhuocheng Hou<sup>1</sup>, Ning Yang<sup>1</sup>, Guiyun Xu<sup>1</sup>, Jiangxia Zheng\*<sup>1</sup> *China Agricultural University, Beijing, China*
- 9:15 AM 334 **Pellet Durability Index (PDI) Prediction Using Machine Learning Models across Feed Mills**  
Jihao You\*<sup>1</sup>, Meeka Capozzalo<sup>2</sup>, Cheryl Krziyzek<sup>3</sup>, Mark Malpass<sup>4</sup>, Mike Martin<sup>5</sup>, Dan Tulpan<sup>1</sup>, Jennifer L. Ellis<sup>1</sup> *University of Guelph, Guelph, Ontario, Canada; <sup>2</sup>Molesworth Farm Supply Ltd., Listowel, Ontario, Canada; <sup>3</sup>Trouw Nutrition Canada, Guelph, Ontario, Canada; <sup>4</sup>MasterFeeds, London, Ontario, Canada; <sup>5</sup>Jones Feed Mills Ltd., Linwood, Ontario, Canada*
- 9:30 AM 335 **Genome-wide variations detected in spaghetti meat myopathy of chicken breast**  
Byungwhi Kong\*<sup>1</sup>, Brian Bowker<sup>1</sup> *USDA-ARS, Athens, Georgia, United States*
- 9:45 AM 336 **Enzyme activities linked to mitochondrial function altered in multiple organs in broilers with wooden breast**  
Majid Shakeri<sup>1,2</sup>, Debolina Chatterjee<sup>2</sup>, Hamid Reza Rafieian-Naeini<sup>3</sup>, Woo K. Kim<sup>3</sup>, Byungwhi Kong<sup>2</sup>, Brian Bowker\*<sup>2</sup> *Oak Ridge Institute for Science and Education, Oak Ridge, Tennessee, United States; <sup>2</sup>USDA-ARS, Athens, Georgia, United States; <sup>3</sup>University of Georgia, Athens, Georgia, United States*



# MONDAY, JULY 13

## Genetics and Molecular Biology

Moderator: Sara Orłowski-Workman, University of Arkansas

206 (A-D)

9:00 AM

### Balancing Discovery and Application: The Evolution of Industry–Academic Partnerships in Poultry Science

Nicholas Anthony\*<sup>1</sup> <sup>1</sup>Cobb-Vantress, Siloam Springs, Arkansas, United States

9:30 AM

337

### Profiling of alternative polyadenylation reveals post-transcriptional regulatory divergence between chicken ESCs and PGCs

Longbin Yang<sup>2</sup>, Zhihua Jiang<sup>6</sup>, Paula Chen<sup>4</sup>, Tom Porter<sup>3</sup>, Yanghua He<sup>5</sup>, Jiuzhou Song\*<sup>1</sup> <sup>1</sup>University of Maryland, Ellicott City, Maryland, United States; <sup>2</sup>University of Maryland, College Park, Maryland, United States; <sup>3</sup>University of Maryland, College Park, Maryland, United States; <sup>4</sup>USDA-ARS, Columbia, Missouri, United States; <sup>5</sup>University of Hawaii, Honolulu, Hawaii, United States; <sup>6</sup>Washington State University, Pullman, Washington, United States

9:45 AM

338

### Evaluating Alternative Reference Genes to GAPDH for qPCR Normalisation in Chickens (*Gallus gallus domesticus*)

Jose A. Quinteros\*<sup>1</sup>, Isaac Esh<sup>3</sup>, Hannah Pooley<sup>1</sup>, Reza Barekatin<sup>2</sup> <sup>1</sup>The University of Sydney, Brownlow Hill, New South Wales, Australia; <sup>2</sup>Poultry Research Foundation, Brownlow Hill, New South Wales, Australia; <sup>3</sup>School of Life and Environmental Sciences, Brownlow Hill, New South Wales, Australia

10:00 AM

Break

10:30 AM

339

### Dissecting Dynamic Transcriptome in Chicken Ovaries during Primordial Follicle Assembly via Single-Cell RNA Sequencing

Minli Yu\*<sup>1</sup> <sup>1</sup>Nanjing Agricultural University, Nanjing, China

10:45 AM

340

### Developmental isoform switching in broiler breast muscle across embryonic and post-hatch stages

Nabeel Alnahhas\*<sup>1</sup> <sup>1</sup>Université Laval, Quebec, Quebec, Canada

11:00 AM

341

### Genetic Selection Alters the Satellite Cell Secretome in Turkeys

Joseph Yimiletey<sup>1</sup>, Zhenyang Li<sup>1</sup>, Chunmei Wan<sup>1</sup>, Sandra G. Velleman<sup>1</sup>, Hui Yu\*<sup>1</sup> <sup>1</sup>The Ohio State University, Columbus, Ohio, United States

MON



## MONDAY, JULY 13

- 11:15 AM 342 **Genomic analysis of avian *Salmonella* spp. using Oxford Nanopore Technologies: serotyping, genotyping, and antimicrobial resistance profiling**  
 Naidelyn N. Muentes\*<sup>1</sup>, María I. Baquero<sup>1</sup>, María Belén Cevallos<sup>1</sup>, Freddy Proaño<sup>1</sup>, Carlos Gómez<sup>1</sup>, Daniel Tirado<sup>1</sup>, Juan Daniel Vaca<sup>1</sup>, Gerardo Vallejo<sup>1</sup>, Francis Acosta<sup>1</sup>, Marco Cisneros<sup>1</sup>  
<sup>1</sup>Central University of Ecuador, Quito, Pichincha, Ecuador

### PSA Hatchery Workshop: From Research to Reality: Communicating Poultry Science to Diverse Audiences

*Chair: Alexandra Jackson, Auburn University & Pravin Mishra, University of Hawaii at Manoa*

105 Constitution Hall

- 9:00 AM **Hatchery Business Meeting**
- 10:00 AM **Break**
- 10:30 AM **Introduction to Workshop**
- 10:40 AM 1067S **Food safety and biosecurity communication for small-scale poultry owners**  
 Indu Upadhyaya\*<sup>1</sup> <sup>1</sup>University of Connecticut, Storrs, Connecticut, United States
- 11:05 AM 1068S **The feed forward: Translating science from lab to flock**  
 Shivaram K. Rao\*<sup>1</sup> <sup>1</sup>Cobb Genetics, Siloam Springs, Arkansas, United States
- 11:30 AM **Panel Discussion**

### Metabolism and Nutrition: Amino Acids

*Moderator: Pratima Adhikari, MS State*

202 (A-D)

- 9:00 AM 343 **Determination of Aviagen amino acid specifications**  
 Leonel Mejia\*<sup>1</sup>, Justina Caldas<sup>1</sup> <sup>1</sup>Aviagen, Huntsville, Alabama, United States



## MONDAY, JULY 13

- 9:30 AM 344 **Crystalline vs Encapsulated Glycine in Low-Protein Diets: Benefits on Performance, Albumen Quality, Blood Parameters, and Nitrogen Utilization in Laying Hens**  
WAQAR IQBAL\*<sup>1,6S</sup>, Jing Wang<sup>1</sup>, Wanyan Liu<sup>1</sup>, Abdelhamid Ahmed<sup>1,2</sup>, Haijun Zhang<sup>1</sup> <sup>1</sup>*Feed Research Institute, Haidian, Beijing, China*; <sup>2</sup>*Poultry Production Department, Hadyek Shoubra, Cairo, Egypt*
- 9:45 AM 345 **Effect of added L-Tryptophan on the performance and mortality of turkey toms**  
Allison Pullin\*<sup>1</sup>, Alexandra Ulans<sup>1</sup>, Dannica Wall<sup>1</sup>, Brendan O. Heinichen<sup>1</sup>, Peter R. Ferket<sup>1</sup>, Jason T. Lee<sup>2</sup>, Roshan Adhikari<sup>2</sup> <sup>1</sup>*North Carolina State University, Raleigh, North Carolina, United States*; <sup>2</sup>*CJ America Inc., Downers Grove, Illinois, United States*
- 10:00 AM **Break**
- 10:30 AM 346 **Effects of Guanidinoacetic Acid Supplementation on Growth Performance and biomarkers of Heat-Stressed Broilers: A Meta-Analysis**  
Cecile Gayraud\*<sup>1</sup>, Maria Mendoza<sup>2</sup> <sup>1</sup>*Evonik Operations GmbH, hanau-Wolfgang, Germany*; <sup>2</sup>*Evonik Corporation, Kennesaw, Georgia, United States*
- 10:45 AM 347 **Assessing Essential Amino Acid Requirements in Broiler Breeders at Peak Production Using a Refined Indicator Oxidation Approach**  
Diego Martinez\*<sup>1</sup>, Oscar Aguilar<sup>1</sup>, Lindsey Conaway<sup>2</sup>, Erik Pollock<sup>2</sup>, Carol Ponce de Leon<sup>3</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*; <sup>3</sup>*Independent consultant, Fayetteville, Arkansas, United States*
- 11:00 AM 348 **Optimizing broiler feed formulations across different growth phases by adjusting guanidinoacetic acid level and its energy matrix value**  
Victor D. Naranjo<sup>3</sup>, Lukas Bauer<sup>1</sup>, Alex Maiorka<sup>2</sup>, Juliano Dorigam<sup>1</sup>, Patricia Tomazini\*<sup>2</sup>, Marley Conceição dos Santos<sup>2</sup> <sup>1</sup>*Evonik Operations GmbH, Hanau, Hessen, Germany*; <sup>2</sup>*Federal University of Paraná, Curitiba, Paraná, Brazil*; <sup>3</sup>*Evonik Guatemala S.A., Guatemala*
- 11:15 AM 349 **Early biomarker relationship to breast muscle myopathies in broilers fed arginine silicate inositol and guanidinoacetic acid**  
Michael Carroll\*<sup>1</sup>, Elizabeth Bobeck<sup>1</sup> <sup>1</sup>*Iowa State University, Ames, Iowa, United States*
- 11:30 AM 350 **Nutrient-specific regulation of IGF-1–mTOR axis and growth under dietary restriction in Japanese quail (*Coturnix japonica*)**  
Gebrehaweria K. Reda\*<sup>1,2,3</sup>, Ádám Z. Lendvai<sup>2</sup>, Levente Czeglédi<sup>1</sup> <sup>1</sup>*University of Debrecen, Hungary*; <sup>2</sup>*University of Debrecen, Hungary*; <sup>3</sup>*Adigrat University, Adigrat, Tigray, Ethiopia*

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# Posters

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Poster Presentations



## POSTERS

### Student Poster Competition I

Friday, July 10 · 10:00 AM · 106 & 107 Constitution Hall

- 351P **Determining the conversion efficiency of phenylalanine to tyrosine in a modern broiler strain**  
Kenneth B. Nelson\*<sup>1GS</sup>, Michael Kidd<sup>1</sup>, Benjamin Parsons<sup>1</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States
- 352P **Release of phosphorus and inositol from soybean meal by broiler chickens fed diets with graded levels of microbial phytase**  
Andrea Paola Mallea Ortiz\*<sup>1GS</sup>, Pam L. Utterback<sup>1</sup>, Su A Lee<sup>1</sup>, Hans H. Stein<sup>1</sup>, Carl Parsons<sup>2</sup> <sup>1</sup>University of Illinois, Urbana, Illinois, United States; <sup>2</sup>University of Illinois, Champaign, Illinois, United States
- 353P **A blend mainly based on oregano essential oil and spices improved body weight distribution and growth performance in broilers**  
Juliette Foglio\*<sup>12UG</sup>, Elisa Arnaud<sup>1</sup>, Saksit Srinongkote<sup>3</sup>, Jean-François Gabarrou<sup>1</sup> <sup>1</sup>Laboratoires Phodé, TERSSAC, France; <sup>2</sup>ENSAT, Toulouse, France; <sup>3</sup>Animal Research and Consultant Co, Mahasarakham, Thailand
- 354P **A SINGLE AND COMBINED SUPPLEMENTATION OF 25-HYDROXYCHOLECALCIFEROL AND PROBIOTICS IN FEED ON PERFORMANCE, INTESTINAL AND BONE MORPHOLOGY IN BROILER CHICKENS**  
Fatima Y. Araujo Caldas\*<sup>1UG</sup> <sup>1</sup>Universidad Nacional Agraria La Molina, Lima, Select a State or Province, Peru
- 355P **The impact of a Quillaja saponaria product on growth performance and ileal amino acid digestibility of broiler chickens**  
Kasey Young\*<sup>1GS</sup>, Rosana Hirai<sup>1</sup>, Rahul Reddy<sup>1</sup>, Addison Elstner<sup>1</sup>, Abigail Flores<sup>1</sup>, Camryn Wilder<sup>1</sup>, Austin silva<sup>1</sup>, Kyle Brown<sup>2</sup>, Staci Cantley<sup>2</sup>, Audrey McElroy<sup>1</sup> <sup>1</sup>Texas A&M University, College Station, Texas, United States; <sup>2</sup>Huvepharma, Peachtree City, Georgia, United States
- 356P **Evaluation of Lippia origanoides essential oil and fructooligosaccharides on amino acid digestibility in 21 d old broilers**  
Matias Moreno Camacho\*<sup>1GS</sup>, Jaime A. Ángel Isaza<sup>2</sup>, Mariana Parra Cerezo<sup>2</sup>, Samuel Rochell<sup>1</sup>, Gustavo Quintana Ospina<sup>1</sup> <sup>1</sup>Auburn University, Auburn, Alabama, United States; <sup>2</sup>Promitec, Bucaramanga, Colombia
- 357P **Effects of dietary deoxynivalenol and zearalenone on pullet performance from 4 to 10 weeks of age**  
Stephanie A. Anshah\*<sup>1GS</sup>, Patrick Tamatey<sup>1</sup>, Xavia A. Harris<sup>1</sup>, Dervan D. Bryan<sup>1</sup> <sup>1</sup>Pennsylvania State University, State College, Pennsylvania, United States



## POSTERS

- 358P Description of a dynamic mechanistic protein digestion model for poultry**  
Grace A. Hong\*<sup>1GS</sup>, John Cant<sup>1</sup>, Elijah G. Kiarie<sup>2</sup>, Sonja de Vries<sup>3</sup>, Xuechun Bai<sup>4</sup>, Jennifer L. Ellis<sup>5</sup> <sup>1</sup>University of Guelph, Markham, Ontario, Canada; <sup>2</sup>University of Guelph, Guelph, Ontario, Canada; <sup>3</sup>Wageningen University and Research, Wageningen, Netherlands; <sup>4</sup>Hendrix Genetics, Kitchener, Ontario, Canada; <sup>5</sup>University of Guelph, Guelph, Ontario, Canada
- 359P Determination of relative bioavailability of calcium in four limestone sources varying in apparent ileal digestibility of calcium in broiler chickens**  
Juan Carlos Valencia Beltran\*<sup>2GS</sup>, Pam L. Utterback<sup>1</sup>, Jason Lee Emmert<sup>1</sup>, Benjamin Parsons<sup>2</sup>, Carl Parsons<sup>1</sup> <sup>1</sup>University of Illinois, Urbana-Champaign, Illinois, United States; <sup>2</sup>University of Arkansas, Fayetteville, Arkansas, United States
- 360P Bone parameters of laying hens in the early lay phase when fed with lower copper through proteinate supplementation**  
Gabriela C. Neves de Souza\*<sup>1UG</sup>, Vinicio d. Cardoso<sup>2</sup>, Letícia A. Silva<sup>3</sup>, Luiz F. Costa e Silva<sup>5</sup>, Adriana Nascimento<sup>5</sup>, Renan G. da Luz<sup>3</sup>, Lidiane I. Datsh<sup>2</sup>, Tatiana C. Santos<sup>4</sup> <sup>1</sup>State University of Maringá, Maringá, PR, Brazil; <sup>2</sup>State University of Maringá, Maringá, Paraná, Brazil; <sup>3</sup>Universidade Estadual de Maringá, Maringá, Paraná, Brazil; <sup>4</sup>State University of Maringá, Maringá, PR, Brazil; <sup>5</sup>Alltech, Maringá, Paraná, Brazil
- 361P Role of 25-hydroxyvitamin D3 on broiler growth performance and tibia bone quality**  
Jocelyn N. Garcia\*<sup>1UG</sup>, Nicolas Mejia-Abaunza<sup>1</sup>, Muhammad Ali<sup>1</sup>, Federico Etcheverry<sup>1</sup>, Allison Jun T. Kawaoku<sup>1</sup>, Matt Einarson<sup>2</sup>, Seth Hennagir<sup>2</sup>, Chongxiao Chen<sup>1</sup> <sup>1</sup>University of Georgia, Athens, Georgia, United States; <sup>2</sup>SAM Nutrition, Bloomington, Minnesota, United States
- 362P Dietary available phosphorus reduction in commercial laying hens**  
Caio B. Barbalho\*<sup>1GS</sup>, Vitor Pais<sup>1</sup>, Mario Lopes<sup>2</sup>, Byron Xavier Munoz<sup>1</sup>, Sara Benavides<sup>1</sup>, Melany Lovón<sup>2</sup>, Cristiane S. Araújo<sup>2</sup>, Lucio F. Araujo<sup>2</sup>, Maria A. Joaquin<sup>1</sup> <sup>1</sup>Faculty of Animal Science and Food Engineering, Pirassununga, Brazil; <sup>2</sup>University of Sao Paulo, Pirassununga, SP, Brazil
- 363P Early exposure to adult cecal microbiota alters gut microbiota maturation throughout the broiler growth cycle**  
Nir Ben Porat\*<sup>1GS</sup>, Lian Nashif<sup>1</sup>, Erez Mills<sup>1</sup> <sup>1</sup>Hebrew University of Jerusalem, Rehovot, Israel
- 364P Prevalence of Microbial Contamination in Chicken Carcasses and Eggs from Backyard Poultry Farms in North Carolina**  
Moeen Khan\*<sup>1GS</sup>, Claire Suszynski<sup>1</sup>, Yabaiz Tahir<sup>2</sup>, Justin H. Lowery<sup>3</sup>, Christina Sigmon<sup>1</sup>, Samuel Mwangi<sup>4</sup>, Lin Walker<sup>5</sup> <sup>1</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>2</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>3</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>4</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>5</sup>NC State University, Raleigh, North Carolina, United States

**POSTERS**

- 365P **Impact of electron beam treatment on pathogen reduction and resuscitation dynamics in refrigerated chicken breast filets**  
Tanmaie Kalapala\*<sup>1GS</sup>, Komala Arsi<sup>2</sup>, Geetha Kumar-Philips<sup>3</sup>, Casey M. Owens<sup>4</sup>, Tomi Obe<sup>57</sup>, Palmy Jesudhasan<sup>6</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup>Poultry Production and Product Safety Research, Fayetteville, Arkansas, United States; <sup>3</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>4</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>5</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>6</sup>USDA-ARS, Fayetteville, Arkansas, United States; <sup>7</sup>Center for Food Safety. University of Arkansas Division of Agriculture, Fayetteville, Arkansas, United States
- 366P **Comparing Salmonella Typhimurium strain virulence using chicken cecal enteroids and drop plating method**  
Lauren M. Laverty\*<sup>1GS</sup>, Kristen Martin<sup>2</sup>, Juan D. Latorre<sup>3</sup>, Danielle Graham<sup>4</sup>, Billy M. Hargis<sup>1</sup> <sup>1</sup>University of Arkansas, Springdale, Arkansas, United States; <sup>2</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>3</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>4</sup>University of Arkansas, Fayetteville, Arkansas, United States
- 367P **Impact of stocking density on litter conditions and microbial contamination in cage-free laying hens**  
Claire Suszynski\*<sup>1GS</sup>, Alexandra Ulans<sup>1</sup>, Justin H. Lowery<sup>2</sup>, Moeen Khan<sup>3</sup>, Christina Sigmon<sup>1</sup>, Allison Pullin<sup>4</sup>, Lin Walker<sup>1</sup> <sup>1</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>2</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>3</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>4</sup>North Carolina State University, Raleigh, North Carolina, United States
- 368P **Comparing a laboratory-scale pellet mill and a laboratory-scale water bath on the thermal inactivation of Enterococcus Faecium, a Salmonella surrogate, in broiler feed**  
Tara Grant\*<sup>1GS</sup>, Arabella Jarvis<sup>1</sup>, Emily Magee<sup>2</sup>, Timothy Boltz<sup>3</sup> <sup>1</sup>Mississippi State University, Mississippi State, Mississippi, United States; <sup>2</sup>Mississippi State University, Starkville, Mississippi, United States; <sup>3</sup>Mississippi State University, Starkville, Mississippi, United States



## POSTERS

- 369P **Water-Stabilized Pimenta and Eugenol Nanoemulsions and a Salmonella Typhimurium Vaccine Elicit Comparable Cecal Colonization and Liver Dissemination Resistance on Salmonella Infantis and Salmonella Schwarzengrund in Growing Turkeys**  
 Amritha Ajayan\*<sup>1GS</sup>, DHANANJAI MURINGATTU PRABHAKARAN<sup>2</sup>, Peter Bina<sup>3</sup>, Hamza Javaid<sup>4</sup>, Luna Akhtar<sup>1</sup>, Abhinav Upadhyay<sup>5</sup>, Tim Johnson<sup>6</sup>, Carrie Creemers<sup>8</sup>, Ben Wileman<sup>9</sup>, Anup Kollanoor Johnny<sup>7</sup> <sup>1</sup>University of Minnesota, Saint Paul, Minnesota, United States; <sup>2</sup>UNIVERSITY OF MINNESOTA, Saint Paul, Minnesota, United States; <sup>3</sup>University of Minnesota, Falcon Heights, Minnesota, United States; <sup>4</sup>University of Minnesota, Saint Paul, Minnesota, United States; <sup>5</sup>University of Connecticut, Fayetteville, Arkansas, United States; <sup>6</sup>University of Minnesota, Kimball, Minnesota, United States; <sup>7</sup>University of Minnesota, Woodbury, Minnesota, United States; <sup>8</sup>Jennie-O Turkey, Willmar, Minnesota, United States; <sup>9</sup>Select Genetics, Osceola, Iowa, United States
- 370P **Propionibacterium freudenreichii probiotic and Salmonella Typhimurium vaccine alleviate cecal microbiome dysbiosis in 12-week-old commercial turkeys exposed to Salmonella enterica Reading challenge**  
 DHANANJAI MURINGATTU PRABHAKARAN\*<sup>1GS</sup>, Claire Peichel<sup>1</sup>, Amritha Ajayan<sup>2</sup>, Anup Kollanoor Johnny<sup>3</sup> <sup>1</sup>University of Minnesota, Saint Paul, Minnesota, United States; <sup>2</sup>University of Minnesota, Saint Paul, Minnesota, United States; <sup>3</sup>University of Minnesota, Woodbury, Minnesota, United States
- 371P **Effects of Corn Type and Coccidiosis Challenge on Broiler Meat Quality Traits: Composition, Texture, and Lipid Oxidation**  
 Jean C. Concepcion\*<sup>1GS</sup>, Christina Sigmon<sup>1</sup>, Camila Hammel Sobreira<sup>1</sup>, Jennifer Rainbow<sup>1</sup>, Samuel Mwangi<sup>1</sup>, Yan L. Campbell<sup>1</sup> <sup>1</sup>North Carolina State University, Raleigh, North Carolina, United States
- 372P **Parameter Optimization of Pulsed UV Light in Liquid Egg White and Yolk and Initial Microbial Assessment**  
 Camila Hammel Sobreira\*<sup>1GS</sup>, Mary Mendoza<sup>1</sup>, Jean C. Concepcion<sup>1</sup>, Aaron Kiess<sup>1</sup>, Yan L. Campbell<sup>1</sup> <sup>1</sup>North Carolina State University, Raleigh, North Carolina, United States
- 373P **Effects of dietary unblanched high-oleic peanuts on meat quality of spent laying hens**  
 Afsana Rahaman Munmun\*<sup>12GS</sup>, Jean C. Concepcion<sup>3</sup>, Christina Sigmon<sup>1</sup>, Ondulla T. Toomer<sup>4</sup>, Thien C. Vu<sup>4</sup>, Yan L. Campbell<sup>1</sup> <sup>1</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>2</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>3</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>4</sup>Agricultural Research Service, US Dept. of Agriculture, Raleigh, North Carolina, United States



## POSTERS

### Student Poster Competition II

Friday, July 10 · 3:15 PM · 106 & 107 Constitution Hall

- 374P **Computer Vision–Driven Feather Scoring for Automated Welfare Monitoring in Broiler Breeders**  
 Stephen Afrifa\*<sup>1GS</sup>, Edgar O. Oviedo<sup>2</sup>, Ramesh B. Bist<sup>1</sup> *<sup>1</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>2</sup>North Carolina State University, Raleigh, North Carolina, United States*
- 375P **Comparison of white LED lighting to poultry specific lighting with moon phase on fear and stress**  
 Colby Allensworth\*<sup>1GS</sup>, Isabella R. Villarreal<sup>2</sup>, Parker Watson<sup>2</sup>, Emily Jiral<sup>3</sup>, Gregory Archer<sup>4</sup> *<sup>1</sup>Texas A&M University, College Station, Texas, United States; <sup>2</sup>Texas A&M University, College Station, Texas, United States; <sup>3</sup>Texas A&M University, College Station, Texas, United States; <sup>4</sup>Texas A&M Agrilife Extension, College Station, Texas, United States*
- 376P **Effects of environmental enrichment on behavior and space use in cage-housed laying hens**  
 Emily F. McManaway\*<sup>1UG</sup>, Natalia Cummings<sup>1</sup>, Thomas H. Powell<sup>1</sup> *<sup>1</sup>Murray State University, Reynolds Station, Kentucky, United States*
- 377P **Monitoring Pecking of enrichment block pecking in Cage-free laying hens with deep learning**  
 Samin Dahal\*<sup>1GS</sup>, Bidur Paneru<sup>2</sup>, Anjan Dhungana<sup>3</sup>, Lilong Chai<sup>3</sup> *<sup>1</sup>University of Georgia, Athens, Georgia, United States; <sup>2</sup>University of Georgia, Athens, Georgia, United States; <sup>3</sup>University of Georgia, Athens, Georgia, United States*
- 378P **Genetic diversity monitoring and baseline establishment for investigating suspected sex-linked lethal alleles in Korean native chicken purebred lines**  
 Dong-Hun Noh\*<sup>1GS</sup>, Eun Jung Cho<sup>2</sup>, Ji-Won Kim<sup>3</sup>, Seong-Hwan Park<sup>1</sup>, Chang-A Hong<sup>1</sup>, Ye-Won Choi<sup>1</sup>, Jae-Kwang Kim<sup>1</sup>, Seungchang Kim<sup>4</sup>, Sang-Hyon Oh<sup>12</sup> *<sup>1</sup>Gyeongsang National University, Jinju, Gyeongsangnam-do, Korea (the Republic of); <sup>2</sup>Gyeongsang National University, Jinju, Gyeongsangnam-do, Korea (the Republic of); <sup>3</sup>National Institute of Animal Science, Chonan, Chungcheongnam-do, Korea (the Republic of); <sup>4</sup>National Institute of Animal Science, Hamyang, Gyeongsangnam-do, Korea (the Republic of)*
- 379P **Transduction efficiency of adeno-associated virus (AAV) serotypes in chicken DF-1 fibroblast and primordial germ cells**  
 Sabrina Islam Mony\*<sup>1GS</sup>, Paula Chen<sup>2</sup> *<sup>1</sup>University of Missouri-Columbia, Columbia, Missouri, United States; <sup>2</sup>USDA-ARS, Columbia, Missouri, United States*



## POSTERS

- 380P Comparative Genomics of ECOR and Avian Pathogenic Escherichia coli Reveals Plasmid-Associated Virulence and Antimicrobial Resistance Determinants**  
 Sunita Shrestha\*<sup>1GS</sup>, Linan Jia<sup>1</sup>, Manhong Wang<sup>1</sup>, Chuan-Yu Hsu<sup>3</sup>, Mark A. Arick II<sup>3</sup>, Adam Thrash<sup>3</sup>, Xue Zhang<sup>4</sup>, Ken Macklin<sup>1</sup>, Jeffrey Evans<sup>2</sup>, Kelsy Robinson<sup>2</sup>, Li Zhang<sup>1</sup> <sup>1</sup>Mississippi State University, Starkville, Mississippi, United States; <sup>2</sup>USDA Agricultural Research Service, Starkville, Mississippi, United States; <sup>3</sup>Institute for Genomics, Biocomputing and Biotechnology, Starkville, Mississippi, United States; <sup>4</sup>Mississippi State University, Starkville, Mississippi, United States
- 381P Effect of Sodium beta hydroxy butyrate on bacterial chondronecrosis and osteomyelitis induced by Staphylococcus aureus in broiler chickens**  
 Sai Kumar Reddy Ragyari\*<sup>1GS</sup>, Venkata S. Choppa<sup>1</sup>, Seshidhar R. Gudidoddi<sup>1</sup>, Venkata Prathap Reddy Keshava Reddy<sup>1</sup>, Doyun Goo<sup>2</sup>, Hemanth Reddy Katha<sup>1</sup>, Ishwari Gyawali<sup>3</sup>, Woo K. Kim<sup>4</sup> <sup>1</sup>UNIVERSITY OF GEORGIA, Athens, Georgia, United States; <sup>2</sup>University of Georgia, Athens, Georgia, United States; <sup>3</sup>University of Georgia, Athens, Georgia, United States; <sup>4</sup>University of Georgia, Athens, Georgia, United States
- 382P Further assessment of 1,25(OH)2D3-glycosides supply duration on reducing bacterial chondronecrosis with osteomyelitis lameness in broilers**  
 Ashen E. Arachchi\*<sup>1GS</sup>, Anh Do<sup>1</sup>, Ruvindu Perera<sup>1</sup>, Woro W. Kalanjati<sup>2</sup>, Andi Asnayanti<sup>2</sup>, Mian R. Ahmed<sup>3</sup>, Shashtej Mummadi<sup>3</sup>, Zoe Zeman<sup>4</sup>, Kathrin Buehler<sup>5</sup>, Jan Dirk V. Klis<sup>5</sup>, Michael Kidd<sup>2</sup>, Adnan Alrubaye<sup>12</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>3</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>4</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>5</sup>Herbonis Animal Health GmbH (Innovad Group), Augst, Switzerland
- 383P Evaluating the impact of carotenoid-rich orange corn diet on broiler performance under Eimeria Challenge**  
 Jennifer Rainbow\*<sup>1GS</sup>, Philip Yeboah<sup>2</sup>, Demilade I. Ibiwoye<sup>7</sup>, Yabaiz Tahir<sup>3</sup>, Shelly Nolin<sup>4</sup>, Rebecca Wysocky<sup>5</sup>, Lisa R. Bielke<sup>6</sup>, Samuel Mwangi<sup>8</sup> <sup>1</sup>NCSU, Raleigh, North Carolina, United States; <sup>2</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>3</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>4</sup>NC State University, Raleigh, North Carolina, United States; <sup>5</sup>NC State University, Raleigh, North Carolina, United States; <sup>6</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>7</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>8</sup>North Carolina State University, Raleigh, North Carolina, United States
- 384P Detection of Early Symptoms of Respiratory Diseases in SPF Leghorn Laying Hen Using Deep Learning Techniques**  
 Bidur Paneru\*<sup>1GS</sup>, Ana Zamora<sup>2</sup>, Anjan Dhungana<sup>1</sup>, Samin Dahal<sup>1</sup>, Roshan Poudel<sup>2</sup>, Nikolas Faust<sup>2</sup>, Maricarmen Garcia<sup>2</sup>, Lilong Chai<sup>1</sup> <sup>1</sup>University of Georgia, Athens, Georgia, United States; <sup>2</sup>University of Georgia, Athens, Georgia, United States
- 385P A High n-6:n-3 PUFA Ratio Primes Apical-Out Chicken Enteroids for Enhanced Susceptibility to RSL3-Induced Ferroptosis**  
 Chun-da Chen\*<sup>1GS</sup>, Yuan-Yu Lin<sup>1</sup> <sup>1</sup>National Taiwan University, Taipei, Taiwan



## POSTERS

- 386P **A chicken embryo challenge model reveals strain-dependent variation in the pathogenic potential of *Enterococcus faecalis***  
 Manhong Wang\*<sup>1GS</sup>, Huanling Xing<sup>1</sup>, Chuan-Yu Hsu<sup>2</sup>, Xue Zhang<sup>3</sup>, Pratima Adhikari<sup>1</sup>, Peixin Fan<sup>3</sup>, Katie Elliot<sup>4</sup>, Ken Macklin<sup>1</sup>, Li Zhang<sup>1</sup> <sup>1</sup>Mississippi State University, Mississippi State, Mississippi, United States; <sup>2</sup>Mississippi State University, Mississippi State, Mississippi, United States; <sup>3</sup>Mississippi State University, Mississippi State, Mississippi, United States; <sup>4</sup>USDA, Mississippi State, Mississippi, United States
- 387P **Kinetics of vaccine response in broilers in the presence of maternal antibodies**  
 Anne S. Perera\*<sup>1GS</sup>, Muhammed Farooq<sup>1</sup>, Zainab Mushtaq<sup>1</sup>, Ashish Gupta<sup>1</sup>, Susan Cork<sup>1</sup>, Teryn Girard<sup>2</sup>, Chantel Caughlin<sup>2</sup>, Victor Palomino Tapia<sup>3</sup>, Mohamed F. Abdul-Careem<sup>1</sup> <sup>1</sup>University of Calgary, Calgary, Alberta, Canada; <sup>2</sup>Prairie Livestock Veterinarians, Red Deer, Alberta, Canada; <sup>3</sup>Maple Leaf Foods, Wetaskiwin, Alberta, Canada
- 388P **Virulence-associated genes and inoculum dose influence Avian Pathogenic *Escherichia coli* colonization and pathogenesis in late-lay hens via intratracheal challenge**  
 Carlos A. Guardado\*<sup>1GS</sup>, Daniel Wilson<sup>4</sup>, Christopher Magee<sup>2</sup>, Jeffrey Evans<sup>2</sup>, Kelsy Robinson<sup>2</sup>, Li Zhang<sup>3</sup>, Linan Jia<sup>3</sup>, Ken Macklin<sup>3</sup>, Pratima Adhikari<sup>3</sup> <sup>1</sup>Mississippi State, Starkville, Mississippi, United States; <sup>2</sup>USDA-ARS, Starkville, Mississippi, United States; <sup>3</sup>Mississippi State University, Mississippi State, Mississippi, United States; <sup>4</sup>Wilson Vet Co, Franklin, Indiana, United States
- 389P **Non-invasive monitoring of vaccine-induced immunity in Layers using egg yolk antibodies**  
 Zainab Mushtaq\*<sup>1GS</sup>, Muhammad Farooq<sup>1</sup>, Anne S. perera<sup>1</sup>, Susan Cork<sup>1</sup>, Ashish Gupta<sup>2</sup>, Teryn Girard<sup>3</sup>, Mohamed F. Abdul-Careem<sup>1</sup> <sup>1</sup>University of Calgary, CALGARY, Alberta, Canada; <sup>2</sup>Diagnostic Services Unit University of Calgary, CALGARY, Alberta, Canada; <sup>3</sup>Prairie Livestock Veterinarians, Red Deer, Alberta, Canada
- 390P **Mycotoxin-induced immune suppression and body composition changes in broiler chickens**  
 Laharika Kappari\*<sup>1GS</sup>, Venkata Prathap Reddy Keshavareddy<sup>1</sup>, Pavan Ramesha<sup>6</sup>, Todd J. Applegate<sup>2</sup>, Ramesh Selvaraj<sup>3</sup>, Woo K. Kim<sup>4</sup>, Revathi Shanmugasundaram<sup>5</sup> <sup>1</sup>University of Georgia, Athens, Georgia, United States; <sup>2</sup>University of Georgi, Athens, Georgia, United States; <sup>3</sup>University of Georgia, Athens, Georgia, United States; <sup>4</sup>University of Georgia, Athens, Georgia, United States; <sup>5</sup>USDA, ARS, Athens, Georgia, United States; <sup>6</sup>University of Texas at Dallas, Dallas, Texas, United States
- 391P **Developing a Sensor-based Automated Weight Measurement System for Cage-free Pullets and Hens**  
 Anjan Dhungana\*<sup>1GS</sup>, Bidur Paneru<sup>2</sup>, Samin Dahal<sup>1</sup>, Zhihang Song<sup>3</sup> <sup>1</sup>University of Georgia, Athens, Georgia, United States; <sup>2</sup>University of Georgia, Athens, Georgia, United States; <sup>3</sup>University of Georgia, Athens, Georgia, United States



## POSTERS

- 392P **Influence of divergent selection for water efficiency on hatchability, embryonic mortality, and hatch window characteristics in poultry**  
 Rovin Sanjur Caballero\*<sup>1GS</sup>, Naomi Boysen<sup>1</sup>, Kelvin Sanchez Rivera<sup>1</sup>, Hailey Andrews<sup>1</sup>, Maricela Maqueda<sup>1</sup>, Sara Orlowski-Workman<sup>1</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States
- 393P **The effect of heat stress on thermal regulation and growth in broiler breeder hens selected for water efficiency**  
 Allison D. Weaver\*<sup>1GS</sup>, Karen M. Rivera<sup>1</sup>, Rosie Whittle<sup>1</sup>, Maricela Maqueda<sup>1</sup>, Sara Orlowski-Workman<sup>1</sup>, Gregory S. Fraley<sup>2</sup>, Shawna Weimer<sup>1</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup>Purdue University, West Lafayette, Indiana, United States
- 394P **Brooding Temperature and Hygiene Practices on Growth Performance and Respiratory Health of Poultry in Commercial Farms**  
 Sadman Sakib Zihan\*<sup>23GS</sup>, Md. S. Sarker<sup>1</sup>, MF Sharmin<sup>41</sup>, M Mubarak<sup>3</sup> <sup>1</sup>Bangladesh Livestock Research Institute, Dhaka, Dhaka, Bangladesh; <sup>21</sup>Narish Poultry & Hatchery Ltd, Shariatpur, Shariatpur, Bangladesh; <sup>34</sup>Department of Public Health & Bioinformatics, Jahangirnagar University, Savar, Dhaka, Savar, Bangladesh; <sup>42</sup>Bangladesh Jute Research institute, Manik Mia Avenue, Dhaka-<sup>1207</sup>, Dhaka, Bangladesh
- 395P **Assessing bone quality changes in turkey breeder hens over a laying cycle**  
 Tina Soufian\*<sup>1UG</sup>, Clara J. Ziezold<sup>1</sup>, Ana K. Rentsch<sup>12</sup>, Grégoy Y. Bédécarrats<sup>1</sup> <sup>1</sup>University of Guelph, Guelph, Ontario, Canada; <sup>2</sup>University of Guelph, Guelph, Ontario, Canada
- 396P **Evaluation of semen characteristics and testis and epididymis health of late cycle broiler breeder roosters fed hen or rooster specific diets**  
 Emmillie Boot\*<sup>1GS</sup>, Caleb M. Marshall<sup>2</sup>, Beverly L. McLendon<sup>3</sup>, Tatyany Mani<sup>4</sup>, Rebecca Wysocky<sup>5</sup>, H. John Barnes<sup>6</sup>, Ramon Malheiros<sup>4</sup> <sup>1</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>2</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>3</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>4</sup>North Carolina State University, Raleigh, North Carolina, United States; <sup>5</sup>NC State University, Raleigh, North Carolina, United States; <sup>6</sup>North Carolina State University, Raleigh, North Carolina, United States

## Poster Session I

Saturday, July 11 · 10:00 AM · 106 & 107 Constitution Hall

- 397P **Assessment of climatic changes on broiler production in Ido local government of Oyo state**  
 Johnson A. Olupona\*<sup>1</sup> <sup>1</sup>Federal College of Animal Health and Production Technology, Ibadan, Ibadan, Oyo, Nigeria



## POSTERS

- 398P **Problems and prospects of precision feeding among broiler farmers in Ibadan metropolis of Oyo state, Nigeria**  
 Johnson A. Olupona<sup>1</sup>, Opeyemi J. Bolaji\*<sup>1</sup> *<sup>1</sup>Federal College of Animal Health and Production Technology, Ibadan, Ibadan, Oyo, Nigeria*
- 399P **Empowering farmers as advocates: The Manitoba Egg Farmers Ambassador Training program**  
 Wei Jia<sup>1</sup>, Corry Rybuck<sup>1</sup>, Claire McCaffrey<sup>1</sup>, Gemmar Maramot<sup>2</sup>, Anna Rogiewicz\*<sup>3</sup>  
*<sup>1</sup>Manitoba Egg Farmers, Winnipeg, Manitoba, Canada; <sup>2</sup>Manitoba Egg Farmers Learning and Research Centre, Glenlea Research Centre, University of Manitoba, Winnipeg, Manitoba, Canada; <sup>3</sup>University of Manitoba, Winnipeg, Manitoba, Canada*
- 400P **First report of whole genome sequencing of Salmonella Minnesota isolated from turkey**  
 Lenita d. Stefani\*<sup>1</sup>, Pedro F. Teles<sup>1</sup>, Juan P. Teixeira<sup>2</sup>, Miklos M. Bajay<sup>2</sup>, Marcel M. Boiago<sup>1</sup>, Karen A. Borges<sup>3</sup>, Thales Q. Furian<sup>3</sup>, Gustavo d. Fünkler<sup>3</sup>, Denise N. Araujo<sup>1</sup>  
*<sup>1</sup>Santa Catarina State University, Florianopolis, Santa Catarina, Brazil; <sup>2</sup>Bioinformatics, Santa Catarina State University, Lages, Santa Catarina, Brazil; <sup>3</sup>Rio Grande do Sul Federal University, Porto Alegre, RS, Brazil*
- 401P **Climate Adaptation in Poultry: Spatiotemporal Behavioral and Kinematic Responses of Chicken Genotypes to Identical Temperature-Humidity Exposures**  
 Samuel E. Aggrey\*<sup>1</sup>, Ebenezer Agyeman-Duah<sup>2</sup>, Ricky Poku<sup>2</sup>, Christopher Adenyo<sup>4</sup>, Richard Osei-Amponsah<sup>2</sup>, William Holden<sup>1</sup>, Guoming Li<sup>1</sup>, Romdhane Rekaya<sup>3</sup>  
*<sup>1</sup>University of Georgia, Athens, Georgia, United States; <sup>2</sup>University of Ghana, Legon, Gt. Accra, Ghana; <sup>3</sup>University of Georgia, Athens, Georgia, United States; <sup>4</sup>University of Ghana, Legon, Gt. Accra, Ghana*
- 402P **Evaluating germline specificity of NANOS family genes in chicken embryogenesis**  
 Bethany Russell\*<sup>1</sup>, Paula Chen<sup>2</sup> *<sup>1</sup>University of Missouri, Freeburg, Missouri, United States; <sup>2</sup>USDA-ARS, Columbia, Missouri, United States*
- 403P **Genomic comparison of mucoid and non-mucoid Clostridium perfringens isolates from necrotic enteritis-affected broilers**  
 Charles Li\*<sup>2</sup>, Carolyn Parker<sup>1</sup>, Xianghe Yan<sup>3</sup>, SEON WOO Kim<sup>3</sup>, JO ANN VAN KESSEL<sup>3</sup>, BRADD HALEY<sup>3</sup>, JONATHAN SHAO<sup>1</sup>, Zhifeng Sun<sup>2</sup>, Mark C. Jenkins<sup>1</sup>  
*<sup>1</sup>Beltsville Agricultural Research Center, ARS-USDA, Beltsville, Maryland, United States; <sup>2</sup>Beltsville Agricultural Research Center, ARS-USDA, Beltsville, Maryland, United States; <sup>3</sup>Beltsville Agricultural Research Center, Beltsville, Maryland, United States*
- 404P **A Comprehensive Spacio-Temporal Turkey Expression Atlas (TEA)**  
 Kuan Ling Liu\*<sup>4</sup>, Kent Reed<sup>1</sup>, Rami A. Dalloul<sup>2</sup>, Kristen Diehl<sup>3</sup> *<sup>1</sup>University of Minnesota, St. Paul, Minnesota, United States; <sup>2</sup>University of Georgia, Athens, Georgia, United States; <sup>3</sup>USDA-ARS, Beltsville, Maryland, United States; <sup>4</sup>USDA, Beltsville, Maryland, United States*



## POSTERS

- 405P **Predicting egg quality using computer vision**  
 Kaylee Rowland\*<sup>1</sup>, Usamah Kabuye<sup>2</sup>, Tricia Veldhuizen<sup>2</sup>, Jaedyn Condon<sup>2</sup>, Ye Bi<sup>2</sup>, Anna Wolc<sup>12</sup> <sup>1</sup>*Hy-Line International, Linden, Iowa, United States;* <sup>2</sup>*Iowa State University, Ames, Iowa, United States*
- 406P **Detection of pathogenicity-associated genes of *Enterococcus cecorum* in mixed fecal samples from turkeys and chickens**  
 Thaciane L. Amaral\*<sup>1GS</sup>, Lisa R. Bielke<sup>1</sup> <sup>1</sup>*North Carolina State University, Raleigh, North Carolina, United States*
- 407P **Transcriptomic evidence of oviduct-specific immune modulation associated with *Salmonella* Enteritidis colonization in laying hens**  
 Wen-Yuan Yang\*<sup>12</sup> <sup>1</sup>*National Taiwan University, Taipei, Taiwan;* <sup>2</sup>*Zoonoses Research Center and School of Veterinary Medicine, National Taiwan University, Taipei, Taiwan*
- 408P **Rotating coccidiosis control programs: incorporating a live coccidiosis vaccine in conventional broiler production in Canada**  
 Ryan P. Snyder\*<sup>1</sup>, Aline Pereira<sup>2</sup>, Ronan Santos<sup>2</sup>, Roberto Soares<sup>1</sup> <sup>1</sup>*Ceva Animal Health Canada Inc., Cambridge, Ontario, Canada;* <sup>2</sup>*Grand Valley Fortifiers, Cambridge, Ontario, Canada*
- 409P **In vitro effects of protease inhibitors on *Histomonas meleagridis* and associated bacteria in xenic culture**  
 Taylor Schubauer\*<sup>1GS</sup>, Evy Hafer<sup>1</sup>, Aaron Forga<sup>1</sup>, Kasey A. Matusik<sup>1</sup>, Karen Echevarria<sup>1</sup>, Melissa Martinez<sup>1</sup>, Juan D. Latorre<sup>1</sup>, Zhicheng Dou<sup>2</sup>, Danielle Graham<sup>1</sup> <sup>1</sup>*University of Arkansas, Fayetteville, Arkansas, United States;* <sup>2</sup>*Clemson University, Clemson, South Carolina, United States*
- 410P **In-feed Supplementation with Metal Amino Acid Complexed Zinc May Improve Early Performance and Bone Deposition in aMPV Vaccinated Turkey Poults**  
 Aaron Forga\*<sup>1</sup>, Diego Cortes<sup>1</sup>, Seth Hufford<sup>1</sup>, Kasey A. Matusik<sup>1</sup>, Taylor Schubauer<sup>1</sup>, Henrietta Owusu<sup>1</sup>, Karen Echevarria<sup>1</sup>, Melissa Martinez<sup>1</sup>, Cole Crumpacker<sup>2</sup>, Kabel Robbins<sup>2</sup>, Benjamin Parsons<sup>1</sup>, Danielle Graham<sup>1</sup> <sup>1</sup>*University of Arkansas, Fayetteville, Arkansas, United States;* <sup>2</sup>*Butterball LLC, Garner, North Carolina, United States*
- 411P **Evaluation of a microbial consortium for control of *Enterococcus cecorum* in broiler chicken**  
 Usha Sivakumar Sharma\*<sup>1</sup>, Camila Schultz Marcolla<sup>1</sup>, Rajibur Rahman<sup>1</sup>, Stephanie Tollenaar<sup>1</sup>, Tomohiro Hamaoka<sup>2</sup>, Benjamin P. Willing<sup>1</sup> <sup>1</sup>*Department of Agricultural, Food and Nutritional Sciences, Faculty of Agriculture, Life and Environmental Sciences, Edmonton, Alberta, Canada;* <sup>2</sup>*Asahi Biosciences, Inc, Peachtree City, Georgia, United States*



## POSTERS

- 412P **The effects of cyclic heat stress on blood cell profiles and antibody concentrations in broilers selected for low water conversion ratio compared to the modern random-bred broiler**  
 Luke Janski<sup>1</sup>, Chrysta N. Beck<sup>2</sup>, Jossie M. Santamaria<sup>1</sup>, Sara Orłowski-Workman<sup>1</sup>, Walter G. Bottje<sup>1</sup>, Gisela F. Erf<sup>\*1</sup> <sup>1</sup>University of Arkansas System Division of Agriculture, Fayetteville, Arkansas, United States; <sup>2</sup>Mississippi State University, Mississippi State, Mississippi, United States
- 413P **Impact of increasing dietary digestible tryptophan to lysine ratio in broiler breeder pullets on blood serotonin response**  
 Roshan Adhikari<sup>\*1</sup>, Jason T. Lee<sup>2</sup>, Anel Atencio<sup>5</sup>, Randy Mitchell<sup>6</sup>, Benjamin Parsons<sup>3</sup>, Samuel Rochell<sup>4</sup> <sup>1</sup>CJ Bio America Inc, Downers Grove, Illinois, United States; <sup>2</sup>CJ Bio America, Goliad, Texas, United States; <sup>3</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>4</sup>Auburn University, Auburn, Alabama, United States; <sup>5</sup>Perdue Farms, Salisbury, Maryland, United States; <sup>6</sup>Perdue Farms, Salisbury, Maryland, United States
- 414P **Effect of a reduced protein diet and of a proprietary blend of natural compounds on growth performance, litter characteristics, and ammonia emissions in broiler chickens**  
 Theophane de Rauglaudre<sup>1</sup>, Bertrand MEDINA<sup>2</sup>, marie-pierre letourneau montminy<sup>\*1</sup> <sup>1</sup>Laval University, Québec, Quebec, Canada; <sup>2</sup>PROBIOTECH International Inc., Saint Hyacinthe, Quebec, Canada
- 415P **Impact of valine to lysine ratio in male turkey poults on growth performance and feather coverage**  
 Cameron F. Hall<sup>\*1</sup>, Roshan Adhikari<sup>2</sup>, Jason T. Lee<sup>2</sup>, Brian J. Kerr<sup>3</sup>, Dawn Koltes<sup>1</sup> <sup>1</sup>Iowa State University, Ames, Iowa, United States; <sup>2</sup>CJ Bio America, Downer Grove, Illinois, United States; <sup>3</sup>USDA-ARS, Ames, Iowa, United States
- 416P **Egg Quality and Nutritional Profiling of Turkey Varieties: A Comparative Study**  
 Md. Sazedul K. Sarker<sup>1</sup>, Nushrat N. Lisa<sup>\*1</sup>, Farhana Sharmin<sup>2</sup>, Most. Umme S. Ety<sup>1</sup> <sup>1</sup>Bangladesh Livestock Research Institute, Savar, Dhaka, Bangladesh; <sup>2</sup>Bangladesh Jute Research Institute, Dhaka, Bangladesh
- 417P **Vitamin K as a functional nutrient to support calcium metabolism and egg production in modern hens for robust extended laying period**  
 Béatrice Sauv<sup>\*12</sup>, Vincent Demers-Caron<sup>2</sup>, Jacinthe Julien<sup>2</sup>, Nadège Hervé<sup>3</sup>, Agnes Nancy<sup>4</sup>, Marie Pierre Létourneau-Montminy<sup>1</sup>, Angel R. Alfonso Avila<sup>5</sup> <sup>1</sup>Laval University, Québec, Quebec, Canada; <sup>2</sup>Animal Sciences Research Center of Deschambault, Deschambault, Quebec, Canada; <sup>3</sup>Trouw Nutrition Canada, Saint-Hyacinthe, Quebec, Canada; <sup>4</sup>INRAE, Nouzilly, France; <sup>5</sup>CRSAD, Deschambault, Quebec, Canada



## POSTERS

- 418P **Alternative Vitamin K forms as a functional nutrient to support calcium metabolism and egg production in modern hens for robust extended laying period**  
 Béatrice Sauvé\*<sup>1,2</sup>, Vincent Demers-Caron<sup>2</sup>, Jacinthe Julien<sup>2</sup>, Nadège Hervé<sup>3</sup>, Agnes Nancy<sup>4</sup>, Marie Pierre Létourneau-Montminy<sup>1</sup>, Angel R. Alfonso Avila<sup>5</sup>  
<sup>1</sup>Laval University, Québec, Quebec, Canada; <sup>2</sup>Animal Sciences Research Center of Deschambault, Deschambault, Quebec, Canada; <sup>3</sup>Trouw Nutrition Canada, Saint-Hyacinthe, Quebec, Canada; <sup>4</sup>INRAE, Nouzilly, France; <sup>5</sup>CRSAD, Deschambault, Quebec, Canada
- 419P **Dietary supplementation with copper hydroxychloride improves growth performance and footpad health in broilers**  
 Ghayoor Fatima<sup>1</sup>, Alip Kumar\*<sup>1</sup>, Kosar Gharib-Naseri<sup>1</sup>, Lane Pineda<sup>2</sup>, Ana Isabel García-Ruiz<sup>2</sup>, Shu-Biao Wu<sup>1</sup> <sup>1</sup>University of New England, Armidale <sup>2351</sup>, New South Wales, Australia; <sup>2</sup>Trouw Nutrition, Amersfoort, Netherlands
- 420P **Effect of calcium pidolate on mineral digestibility and intestinal health of layers with reduced dietary levels of calcium and phosphorus**  
 Fernando Perazzo<sup>3</sup>, Adiel Lima<sup>3</sup>, Carlos Nascimento<sup>3</sup>, Paloma Souza<sup>3</sup>, Aline Rodrigues<sup>3</sup>, Armand Maniere\*<sup>2</sup>, Laure Duboc<sup>2</sup>, Julian E. Melo<sup>1,2</sup> <sup>1</sup>Universidad Nacional de Lujan, Escobar, Buenos Aires, Argentina; <sup>2</sup>Dietaxion SAS, Le Loroux-Bottereau, France; <sup>3</sup>Universidade Federal da Paraíba, Areia, Brazil
- 421P **Optimization of Sample Preparation Workflow for Rapid Detection of Salmonella enterica in Poultry Using Real-Time qPCR**  
 Rejoice Nyarku<sup>2</sup>, Elizabeth A. Krushinskie\*<sup>1</sup>, Temesgen Samuel<sup>2</sup>, Woubit Abebe<sup>2</sup>  
<sup>1</sup>QuantPath, Superior, Colorado, United States; <sup>2</sup>Tuskegee University, Tuskegee, Alabama, United States
- 422P **Pre-harvest heat stress: connecting the intestinal microbial ecology to the final carcass**  
 Mack P. Myer\*<sup>1</sup>, Taylor Fearing<sup>2</sup>, Elizabeth Greene<sup>3</sup>, Sami Dridi<sup>3</sup>, Dana K. Dittoe<sup>4</sup>  
<sup>1</sup>University of Wyoming, Laramie, Wyoming, United States; <sup>2</sup>Wyoming Public Health Laboratory, Cheyenne, Wyoming, United States; <sup>3</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>4</sup>University of Wyoming, Laramie, Wyoming, United States
- 423P **Contrasting functional genomic profiles of Salmonella enterica subsp. enterica serovars Enteritidis and Heidelberg in Canadian poultry revealed by integrated pangenome-based analysis**  
 Emeli Vargas Romero<sup>2</sup>, Reza Akbari Moghaddam Kakhki\*<sup>1</sup> <sup>1</sup>Université de Montréal, Saint-Hyacinthe, Quebec, Canada; <sup>2</sup>VitalysBio, Saint-Hyacinthe, Quebec, Canada
- 424P **Effects of commercially available backyard egg washing solutions on the cuticle, shell permeability, and dye penetration of white table eggs**  
 Matthew Hughes\*<sup>1</sup>, Leticia Orellana<sup>2</sup>, Brigid McCrea<sup>3</sup>, Chrysta N. Beck<sup>1</sup> <sup>1</sup>Mississippi State University, Mississippi State, Mississippi, United States; <sup>2</sup>Mississippi State University, Starkville, Mississippi, United States; <sup>3</sup>Alabama Cooperative Extension System, Auburn, Alabama, United States



## POSTERS

- 425P **Processing Yields and Meat Quality of Broilers from Divergent Water-Efficiency Lines Subject to Short-Term Water Deprivation**  
 Sarah E. Johnson\*<sup>1</sup>, Rosie Whittle<sup>2</sup>, Karen M. Rivera<sup>3</sup>, Sara Orłowski-Workman<sup>4</sup>, Shawna Weimer<sup>5</sup>, Casey M. Owens<sup>6</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>3</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>4</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>5</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>6</sup>University of Arkansas, Fayetteville, Arkansas, United States
- 426P **The Effect of Thermal Environment and Water-Efficiency Genetic Selection Influence on Yield Distribution and Breast Meat Quality in Broilers**  
 Sarah E. Johnson\*<sup>1</sup>, Jeremy Summers<sup>2</sup>, Rovin Sanjur Caballero<sup>3</sup>, Maricela Maqueda<sup>1</sup>, Naomi Boysen<sup>1</sup>, Kelvin Sanchez Rivera<sup>1</sup>, Hailey Andrews<sup>1</sup>, Rosie Whittle<sup>4</sup>, Shawna Weimer<sup>5</sup>, Sara Orłowski-Workman<sup>6</sup>, Casey M. Owens<sup>7</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>3</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>4</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>5</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>6</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>7</sup>University of Arkansas, Fayetteville, Arkansas, United States

## Poster Session II

Saturday, July 11 · 3:15 PM · 106 & 107 Constitution Hall

- 427P **Anti-Salmonella effects of dietary bacteriophage supplementation on growth performance and pathogen colonization in broiler chickens**  
 Ishwari Gyawali\*<sup>1</sup>, Indira Neupane<sup>1</sup>, Hanseo Ko<sup>2</sup>, Venkata Prathap Reddy Keshava Reddy<sup>1</sup>, Chan Sol Park<sup>4</sup>, Woo K. Kim<sup>3</sup> <sup>1</sup>University of Georgia, Athens, Georgia, United States; <sup>2</sup>University of Georgia, Athens, Georgia, United States; <sup>3</sup>University of Georgia, Athens, Georgia, United States; <sup>4</sup>Pathway Intermediates USA, Rolling Meadows, Illinois, United States
- 428P **Combining postbiotics with essential oil compounds provides greater performance gains than probiotics in male broiler turkeys**  
 Vivek A. Kuttappan\*<sup>1</sup>, Marine Maudoux<sup>1</sup>, Alain Corniaux<sup>1</sup>, Yann Fournis<sup>1</sup> <sup>1</sup>Cargill Inc., Wayzata, Minnesota, United States
- 429P **Effect of different additives in the drinking water on the relative weight of lymphoid organs of broilers raised on dirty litter**  
 David Pompilla-Perez<sup>1</sup>, Melanie Palomino-Palomino<sup>1</sup>, NICEAS C. VILCHEZ\*<sup>1</sup> <sup>1</sup>Universidad Nacional Agraria La Molina, Lima, Peru
- 430P **Dietary inclusion of phytase decreases the severity of bacterial chondronecrosis with osteomyelitis (BCO) in a wire-ramp challenge model in broilers**  
 Elizabeth Greene\*<sup>1</sup>, Nusrat Jahan<sup>1</sup>, Mike Bedford<sup>2</sup>, Carrie L. Walk<sup>2</sup>, Sami Dridi<sup>1</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup>AB Vista, Marlborough, United Kingdom



## POSTERS

- 431P **Effect of dietary inclusion of apple and grape pomace on markers of gut health in broilers (*Gallus gallus*) under DSS-induced chronic inflammation**  
 Milan K. Sharma\*<sup>1</sup>, Eliot M. Dugan<sup>1</sup>, Melissa Huang<sup>1</sup>, Chloe J. McGovern<sup>1</sup>, Peter R. Gracey<sup>1</sup>, Matthew J. Pataki<sup>1</sup>, Andi Yuyun Adhitasari<sup>1</sup>, Vinicius P. de Sao Jose<sup>1</sup>, Elad Tako<sup>1</sup> <sup>1</sup>*Cornell University, Ithaca, New York, United States*
- 432P **BCO lameness incidence and splenic immune responses in broiler chickens following in ovo injections of electron beam-inactivated BCO-causative bacteria**  
 Layla Al-Mitib\*<sup>1</sup>, Ruvindu Perera<sup>3</sup>, Palmy Jesudhasan<sup>5</sup>, Jossie M. Santamaria<sup>4</sup>, Anh Do<sup>6</sup>, Adnan Alrubaye<sup>2</sup> <sup>1</sup>*University of Arkansas, Fayetteville, Arkansas, United States;* <sup>2</sup>*University of Arkansas, Fayetteville, Arkansas, United States;* <sup>3</sup>*University of Arkansas, Fayetteville, Arkansas, United States;* <sup>4</sup>*University of Arkansas System Division of Agriculture, Fayetteville, Arkansas, United States;* <sup>5</sup>*USDA-ARS, Fayetteville, Arkansas, United States;* <sup>6</sup>*University of Arkansas, Fayetteville, Arkansas, United States*
- 433P **Influence of Bio-Clay Supplementation on Growth Performance and Intestinal Microbial Dynamics in Broiler Chickens under a Subclinical Necrotic Enteritis Challenge Model.**  
 Iyabo W. Oluseyifunmi\*<sup>1</sup>, Samuel E. Agada<sup>2</sup>, Jeferson Lourenco<sup>6</sup>, Timothy Phillips<sup>5</sup>, Thomas Isakeit<sup>4</sup>, Youjun Deng<sup>3</sup>, Audrey McElroy<sup>1</sup>, J. A. Byrd<sup>8</sup>, Samson Oladokun<sup>7</sup> <sup>1</sup>*Texas A&M University, College Station, Texas, United States;* <sup>2</sup>*Texas A&M University, College Station, Texas, United States;* <sup>3</sup>*Texas A&M University, College Station, Texas, United States;* <sup>4</sup>*Texas A&M University, College Station, Texas, United States;* <sup>5</sup>*Texas A&M University, College Station, Texas, United States;* <sup>6</sup>*University of Georgia, Athens, Georgia, United States;* <sup>7</sup>*Texas A&M University, College Station, Texas, United States;* <sup>8</sup>*U.S. Department of Agriculture, Agricultural Research Service, Southern Plains Agricultural Research Center, College Station, Texas, United States*
- 434P **Botanical-based additives (liquid and powder versions) alter *Eimeria* pathogenicity in vitro from anticoccidial-resistant strains obtained from commercial turkey houses**  
 Bertrand MEDINA\*<sup>2</sup>, Jacinthe Julien<sup>1</sup>, Ivan D. Girard<sup>2</sup>, Carl Julien<sup>1</sup> <sup>1</sup>*CRSAD, Deschambault, Quebec, Canada;* <sup>2</sup>*PROBIOTECH International Inc., Saint Hyacinthe, Quebec, Canada*
- 435P **Seasonal Variation and Spatial Distribution of Ammonia, Nitrous Oxide, and Methane Concentrations in Commercial Poultry Farms across Quebec, Canada**  
 Mohamed El-Fateh\*<sup>1</sup>, Haijiao Lin<sup>1</sup>, Jacob Ayang<sup>1</sup>, Jean-Marc Larivière<sup>2</sup>, Moussa S. Diarra<sup>3</sup>, Xin Zhao<sup>1</sup> <sup>1</sup>*McGill University, Sainte Anne De Bellevue, Quebec, Canada;* <sup>2</sup>*Institut de technologie agroalimentaire du Québec, La Pocatière, Quebec, Canada;* <sup>3</sup>*Agriculture and Agri-Food Canada, Guelph, Ontario, Canada*
- 436P **Productive performance of Shuvra layer in saline and non-saline agro ecological regions of Bangladesh**  
 Md. Raziul Islam\*<sup>1</sup>, Dr. Kamrun Nahar Monira<sup>1</sup>, Dr. Shabiha Sultana<sup>1</sup>, Dr. Shakila Faruque<sup>1</sup> <sup>1</sup>*Bangladesh Livestock Research Institute, Dhaka, Bangladesh*



## POSTERS

- 437P **Production Performance Of Five Philippine Native Chickens Under Improved Management**  
 Veneranda A. Magpantay\*<sup>1</sup>, Herald Nygel F. Bautista<sup>1</sup>, Kimberly Ann P. Bermudez<sup>1</sup>, Consuelo Amor S. Estrella<sup>1</sup>, Ma. Christine Ortiguero<sup>1</sup>, Giovannie Sarmiento<sup>3</sup>, Rene Santiago<sup>3</sup>, Marjorie Sepina<sup>2</sup> <sup>1</sup>UNIVERSITY OF THE PHILIPPINES LOS BANOS, Los Banos, Laguna, Philippines; <sup>2</sup>Department of Agriculture <sup>4</sup>A, Tiaong, Quezon, Philippines; <sup>3</sup>National Swine and Poultry Research and Development Center, Bureau of Animal Industry, Tiaong, Quezon, Philippines
- 438P **Time-of-day effects on enrichment use and proximity in commercial broiler chickens**  
 Chelsea S. Castillo Najera\*<sup>1</sup>, Emily Nemerovsky<sup>2</sup>, Katy Tarrant<sup>1</sup> <sup>1</sup>California State University, Fresno, Caruthers, California, United States; <sup>2</sup>California State Polytechnic University, Pomona, Pomona, California, United States
- 439P **Effects of drinking water sanitizer classes on intestinal morphology, respiratory immune status, and early broiler performance**  
 Md Raihanul Hoque<sup>1</sup>, Faija Sadia Pory<sup>1</sup>, Biswajit Kumar Biswas<sup>2</sup>, Samuel N. Nahashon<sup>3</sup>, Pramir Maharjan\*<sup>1</sup> <sup>1</sup>Texas A&M University, College Station, Texas, United States; <sup>2</sup>Tennessee State University, Nashville, Tennessee, United States; <sup>3</sup>Tennessee State University, Nashville, Tennessee, United States
- 440P **Evaluating the relationship between stocking density and platform usage in broiler chickens**  
 Jose Millan\*<sup>1</sup>, Katy Tarrant<sup>1</sup> <sup>1</sup>Fresno State, Fresno, California, United States
- 441P **Effects of nitrate levels in drinking water supplies on early broiler performance**  
 Faija Sadia Pory<sup>1</sup>, Md Raihanul Hoque<sup>2</sup>, Yuhua Z. Farnell<sup>3</sup>, Yava Jones-Hall<sup>4</sup>, Pramir Maharjan\*<sup>2</sup> <sup>1</sup>Texas A&M University, College Station, Texas, United States; <sup>2</sup>Texas A&M University, College Station, Texas, United States; <sup>3</sup>Texas A&M University, College Station, Texas, United States; <sup>4</sup>Texas A&M University, College Station, Texas, United States
- 442P **Nonlinear Growth Models of Creole Pullets from the Dry Tropics of Mexico**  
 Diego Zárate-Contreras<sup>1</sup>, Fredy Mera-Zúñiga<sup>3</sup>, Arturo Pro-Martinez<sup>1</sup>, Victor Manuel Valdes-Narvaez\*<sup>4</sup>, Eliseo Sosa-Montes<sup>2</sup>, Fernando González-Cerón<sup>2</sup> <sup>1</sup>Colegio de Postgraduados, Campus Montecillo, Texcoco, Estado de México, Mexico; <sup>2</sup>Universidad Autónoma Chapingo, Texcoco, Estado de México, Mexico; <sup>3</sup>Instituto Tecnológico de Tecamatlán, Tecamatlán, Puebla, Mexico; <sup>4</sup>Universidad de Investigación e Innovación de México, Cuernavaca, Morelos, Mexico
- 443P **From Heat Gain to Heat Loss: A Dynamic Mechanistic Heat Balance Model to Predict Core and Surface Body Temperature in Poultry**  
 Bayan M. Abu Hamdia\*<sup>1</sup>, Jihao You<sup>1</sup>, Emily M. Leishman<sup>2</sup>, Charlie d. Hollander<sup>3</sup>, Elijah G. Kiarie<sup>1</sup>, John Cant<sup>1</sup>, Jennifer L. Ellis<sup>1</sup> <sup>1</sup>University of Guelph, Guelph, Ontario, Canada; <sup>2</sup>Aarhus University, Tjele DK<sup>8830</sup>, Blichers Allé <sup>20</sup>, Denmark; <sup>3</sup>Hybrid Turkeys, Kitchener, Ontario, Canada



## POSTERS

- 444P **Effect of Light Stimulation Age on Keel Bone Integrity and Egg Quality Traits in Chickens**  
 Blake Kuper\*<sup>1</sup>, Kamaryn Beamsley<sup>1</sup>, Kaylee Rowland<sup>1</sup>, Luke Kramer<sup>1</sup>, Petek Settar<sup>2</sup>  
<sup>1</sup>*Hy-Line International, Adel, Iowa, United States*; <sup>2</sup>*Hy-Line International, Dallas Center, Iowa, United States*
- 445P **Dose-response meta-analysis of phytase supplementation on ileal phosphorus and calcium digestibility in turkeys**  
 Reza Akbari Moghaddam Kakhki\*<sup>1</sup>, Sasan Chalaki<sup>2</sup>, Emeli Vargas Romero<sup>3</sup>  
<sup>1</sup>*Université de Montréal, Saint-Hyacinthe, Quebec, Canada*; <sup>2</sup>*Sari University of Agricultural Sciences and Natural Resources, Sari, Mazandaran, Iran (the Islamic Republic of)*; <sup>3</sup>*VitalysBio, Saint-Hyacinthe, Quebec, Canada*
- 446P **A multi-component protease maintains production performance, improves economic benefits, and reduces pathogenic bacteria populations in laying hens fed a low-density diet under commercial conditions.**  
 Olufemi O. Babatunde\*<sup>1</sup>, Glenmer B. Tactacan<sup>1</sup>, Ludovic Lahaye<sup>1</sup>, Mariana L. de Moraes<sup>1</sup> <sup>1</sup>*Jefo Nutrition Inc., St Hyacinthe, Quebec, Canada*
- 447P **Investigation of interactions between phytase, protease, and anti-nutritional factors in soybean meal**  
 Rebekah Drysdale\*<sup>1</sup>, Seth Hufford<sup>1</sup>, Benjamin Parsons<sup>1</sup> <sup>1</sup>*University of Arkansas, Fayetteville, Arkansas, United States*
- 448P **Multi-component protease improves gut morphology, crude protein digestibility, and caecal microflora in broilers fed under- and over-processed soybean meal**  
 Glenmer B. Tactacan\*<sup>1</sup>, Olufemi Babatunde<sup>1</sup>, Ludovic Lahaye<sup>1</sup>, Shahram Golzar Adabi<sup>2</sup> <sup>1</sup>*Jefo Nutrition, Inc., Saint-Hyacinthe, Quebec, Canada*; <sup>2</sup>*Avesa Nutrition, Baglica, Ankara, Turkey*
- 449P **Effects of multienzyme supplementation on production performance, egg quality, and nutrient digestibility in laying hens**  
 Venuste Maniraguha\*<sup>1</sup>, Deborah Adewole<sup>2</sup> <sup>1</sup>*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*; <sup>2</sup>*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*
- 450P **Effects of increasing doses of a novel E. coli phytase SuperPhy on growth performance of broilers fed diets reduced in metabolizable energy, calcium, and phosphorus**  
 Corey A. Johnson<sup>1</sup>, Anthony Quant<sup>1</sup>, Opeadura T. Osunbami<sup>1</sup>, Tanner Wise<sup>1</sup>, Elizabeth Miller<sup>1</sup>, Yulin Ma<sup>2</sup>, Kelly Chen\*<sup>2</sup> <sup>1</sup>*Kalmbach Nutritional Services, Upper Sandusky, Ohio, United States*; <sup>2</sup>*Hanley International LLC, Belmont, Massachusetts, United States*



## POSTERS

- 451P **Evaluation of agZyme supplementation on the performance of broiler chickens fed a corn-soybean meal-based diet**  
 Rafael M. Suzuki<sup>1</sup>, Jessica Conteçote Russo\*<sup>1</sup>, Isadora Arruda<sup>2</sup>, Mauricio F. Martins<sup>2</sup>, Ludmila O. Silva<sup>2</sup>, Rebeka X. De Oliveira<sup>2</sup>, Larissa M. Silva<sup>2</sup>, Tarley A. Barros<sup>1,2</sup>, Flavio J. Ruiz<sup>1</sup>, Patricia D. Marchizeli<sup>1</sup> <sup>1</sup>*Agrocerees Multimix, Rio Claro, São Paulo, Brazil;* <sup>2</sup>*Agrocerees Multimix, Patrocinio, Minas Gerais, Brazil*
- 452P **Effect of egg storage duration on fertility, hatchability and day-old chick quality in Suborno strain**  
 Md. Raziul Islam\*<sup>1</sup>, Dr. Kamrun Nahar Monira<sup>1</sup>, Dr. Shabiha Sultana<sup>1</sup>, Dr. Shakila Faruque<sup>1</sup> <sup>1</sup>*Bangladesh Livestock Research Institute, Dhaka, Bangladesh*
- 453P **Comparison of white LED lighting to poultry specific lighting with moon phase on production**  
 Ethan D. Quaid\*<sup>1</sup>, Isabella R. Villarreal<sup>1</sup>, Parker Watson<sup>1</sup>, Colby Allensworth<sup>1</sup>, Emily Jiral<sup>1</sup>, Gregory Archer<sup>2</sup> <sup>1</sup>*Texas A&M University, College Station, Texas, United States;* <sup>2</sup>*Texas A&M Agrilife Extension, College Station, Texas, United States*
- 454P **Age-Associated Hepatic Proteomic Across the Laying Cycle in Commercial Hens**  
 Md Ahasanul Haque Shahid<sup>1</sup>, Uma Aryal<sup>2</sup>, Rajesh Jha<sup>1</sup>, Birendra Mishra\*<sup>1</sup> <sup>1</sup>*University of Hawaii at Manoa, Ewa Beach, Hawaii, United States;* <sup>2</sup>*Purdue University, West Lafayette, Indiana, United States*
- 455P **In ovo vaccination with chitosan nanoparticle-based subunit vaccine enhances resistance to *Campylobacter jejuni* colonization in broiler chickens**  
 Khaled Abdelaziz\*<sup>1</sup>, Mostafa Naguib<sup>2</sup>, Shreeya Sharma<sup>2</sup>, Abigail Schneider<sup>2</sup>, Shekoni Olaitan Comfort<sup>3</sup>, Renukaradhya Gourapura<sup>3</sup> <sup>1</sup>*Clemson University, Clemson, South Carolina, United States;* <sup>2</sup>*Clemson University, Clemson, South Carolina, United States;* <sup>3</sup>*Ohio State University, Columbus, Ohio, United States*

## Poster Session III

Sunday, July 12 · 8:30 AM · 106 & 107 Constitution Hall

- 456P **Effects of red osier dogwood (*Cornus stolonifera*) extract on growth performance, protein digestibility, immune response, and gut health of broiler chickens in a coccidiosis vaccine challenge model**  
 Deborah Adewole\*<sup>1</sup>, Italo Santos Reis Pereira<sup>1</sup> <sup>1</sup>*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*
- 457P **DOSE response effect of a lysolecithin product on broiler performance, blood profile and gene expression in the jejunum, liver and muscle**  
 Christy de Wildt<sup>1</sup>, Faegheh Zaefarian\*<sup>2</sup> <sup>1</sup>*Adisseeo NL B.V., Raamsdonksveer, Netherlands;* <sup>2</sup>*Adisseeo France SAS, Saint-fons, France*



## POSTERS

- 458P **Effects of phytogetic supplements containing butyrate on broiler performance**  
David Harrington\*<sup>1</sup>, Nemanja Todorovic<sup>1</sup>, Michael D. Sims<sup>2</sup> <sup>1</sup>nuance Biotechnology, Lausanne, Switzerland; <sup>2</sup>Virginia Diversified Research, Harrisonburg, Virginia, United States
- 459P **Field Report: Yeast derived components improved growth performance, cecal microbiota composition, and intestinal integrity in 0-to-33-day old broilers.**  
Theresia Lavergne\*<sup>1</sup>, Ameni Askri<sup>2</sup>, Mariem Saidani<sup>2</sup>, Ben Larbi Manel<sup>2</sup>, Charlie Elrod<sup>1</sup> <sup>1</sup>Natural Biologics, Inc., Newfield, New York, United States; <sup>2</sup>Carthage University, Tunis, Tunisia
- 460P **Alleviation of carbon-tetrachloride induced liver damage supplemented by a blend of artichoke extract, vitamin B complex, amino acids, lemon essential oil and silymarin in chickens**  
Frank Ayala\*<sup>2</sup>, Freddy Farfan<sup>2</sup>, Eliana Icochea<sup>3</sup>, Lenin Maturrano<sup>4</sup>, Guillermo Tellez-Isaias<sup>1</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup>Laboratorios Drogavet, Lima, Peru; <sup>3</sup>Laboratory of Avian Pathology, Faculty of Veterinary Medicine, Universidad Nacional Mayor de San Marcos, Lima, Peru; <sup>4</sup>Laboratory of Biology and Molecular Genetics, Faculty of Veterinary Medicine, Universidad Nacional Mayor de San Marcos, Lima, Peru
- 461P **Double buffered sodium butyrate improves eggshell and bone quality of laying hens in conventional or low energy and protein diets**  
Fernando Perazzo<sup>3</sup>, Adiel Lima<sup>3</sup>, Carlos Nascimento<sup>3</sup>, Paloma Souza<sup>3</sup>, Aline Rodrigues<sup>3</sup>, Clemence Marecaille<sup>2</sup>, Laure Duboc<sup>2</sup>, Julian E. Melo\*<sup>1,2</sup> <sup>1</sup>Universidad Nacional de Lujan, Escobar, Buenos Aires, Argentina; <sup>2</sup>Dietaxion SAS, Le Loroux-Bottereau, France; <sup>3</sup>Universidade Federal da Paraíba, Areia, Brazil
- 462P **Comparative effects of sodium gluconate and sodium butyrate on growth performance and intestinal health of broiler chickens**  
Antonio G. Bertechini\*<sup>1</sup>, Raine M. Bertechini<sup>1</sup>, Ana C. Lima<sup>1</sup>, Louise L. Maciel<sup>1</sup>, Daisuke Matsui<sup>2</sup>, Iki Taketani<sup>3</sup>, Tsuyoshi Tonoue<sup>3</sup>, Izuru Shinzato<sup>3</sup> <sup>1</sup>Federal University of Lavras, Lavras, Minas Gerais, Brazil; <sup>2</sup>Valent BioSciences LLC, Illinois, United States; <sup>3</sup>Sumitomo Chemical Co., Tokyo, Japan
- 463P **Evaluation of the effects of a combination of Bacillus subtilis 29784 and a multi-carbohydrase complex on broiler performance and nutrient digestibility**  
Pierre Cozannet<sup>2</sup>, Rob Shirley<sup>3</sup>, Haitham Yakout<sup>1</sup>, Tim Goossens\*<sup>1</sup> <sup>1</sup>Adisseo, Sint-Niklaas, Belgium; <sup>2</sup>Adisseo, Saint Fons, Auvergne, France; <sup>3</sup>Adisseo, Alpharetta, Georgia, United States
- 464P **A blend mainly based on oregano essential oil and spices increased apparent metabolizable energy and improved growth performance in broilers**  
Jean-François Gabarrou\*<sup>1,6S</sup>, Juliette Foglio<sup>1,3</sup>, Saksit Srinongkote<sup>2</sup>, Elisa Arnaud<sup>1</sup> <sup>1</sup>Laboratoires Phodé, TERSSAC, France; <sup>2</sup>Animal Research and Consultant Co., Mahasarakham, Thailand; <sup>3</sup>ENSAT, Toulouse, France



## POSTERS

- 465P **Dose-response effects of *Macleaya cordata* extract on performance, immune response, and ileal microbiota of broilers under *Clostridium perfringens* challenge**  
 Ala E. Abudabos\*<sup>1</sup>, Ali R. Al Sulaiman<sup>2</sup> <sup>1</sup>Tennessee State University, Nashville, Tennessee, United States; <sup>2</sup>Environmental Protection Technologies Institute, Sustainability and Environment Sector, King Abdulaziz City for Science and Technology, Riyadh, Riyadh, Saudi Arabia
- 466P **In-ovo Administration of Phytogetic MyoS2 Promotes Embryonic Skeletal Muscle Development via the Suppression of Myostatin and Activation of Myogenesis in Broilers**  
 Liang-en Yu\*<sup>1,4</sup>, Bor-rung Ou<sup>2</sup>, Jan-Ying Yeh<sup>3</sup>, Chuan-Ju Lin<sup>4</sup>, Yu-Chuan Liang<sup>4</sup>  
<sup>1</sup>National Taiwan University, Taipei, Taiwan; <sup>2</sup>Tunghai University, Taichung, Taiwan; <sup>3</sup>Asia University, Taichung, Taiwan; <sup>4</sup>Academia Sinica, Taipei, Taiwan
- 467P **Evaluation of postbiotic, phytogetic, and essential oil combination products on broiler performance**  
 Maci Oelschlager\*<sup>1</sup>, Jason McCamy<sup>1</sup>, Fernanda Castro<sup>1</sup>, Manuel Da Costa<sup>1</sup> <sup>1</sup>Cargill Animal Nutrition, Wayzata, Minnesota, United States
- 468P **The effect of feeding a supplemental sodium gluconate on performance and gut health parameters of commercial male broilers**  
 Daisuke Matsui\*<sup>2</sup>, Colby Allensworth<sup>1</sup>, Shiori Iino<sup>4</sup>, Mari Haneta<sup>4</sup>, Hiroya Kondo<sup>4</sup>, Takako Fukuda<sup>4</sup>, Tsuyoshi Tonoue<sup>4</sup>, Izuru Shinzato<sup>4</sup>, Janet Snow<sup>3</sup>, Hilary Pavlidis<sup>3</sup>, Gregory Archer<sup>1</sup> <sup>1</sup>Texas A&M University, College Station, Texas, United States; <sup>2</sup>Valent BioSciences, LLC., Libertyville, Illinois, United States; <sup>3</sup>CSA Animal Nutrition, Dayton, Ohio, United States; <sup>4</sup>Sumitomo Chemical Co., Ltd., Tokyo, Japan
- 469P **Production of value-added chicken egg through dietary manipulation of selected herbal plants**  
 F Sharmin\*<sup>2</sup>, Md. S. Sarker<sup>1</sup>, US Ety<sup>1</sup>, SS Zihan<sup>3</sup>, NN Lisa<sup>1</sup> <sup>1</sup>Bangladesh Livestock Research Institute, Dhaka, Dhaka, Bangladesh; <sup>2</sup>Bangladesh Jute Research Institute, Dhaka, Bangladesh; <sup>3</sup>Bangladesh Livestock Research Institute, Dhaka, Bangladesh
- 470P **Effects of agProFito on the quality of fresh and stored eggs**  
 Rafael M. Suzuki<sup>1</sup>, Jessica Conteçote Russo\*<sup>1</sup>, Brunna G. Leite<sup>1</sup>, Isadora Arruda<sup>2</sup>, Mauricio F. Martins<sup>2</sup>, Ludmila O. Silva<sup>2</sup>, Rebeka X. De Oliveira<sup>2</sup>, Larissa M. Silva<sup>2</sup>, Tarley A. Barros<sup>1,2</sup>, Flavio J. Ruiz<sup>1</sup>, Patricia D. Marchizeli<sup>1</sup> <sup>1</sup>Agrocerees Multimix, Rio Claro, São Paulo, Brazil; <sup>2</sup>Agrocerees Multimix, Patrocínio, Minas Gerais, Brazil
- 471P **The effect of feeding *Lactobacillus reuteri* and *Escherichia coli* Nissle on growth performance of broiler chickens**  
 Alondrah S. Rodriguez<sup>1</sup>, Samuel N. Nahashon\*<sup>2</sup>, Agnes Kilonzo-Nthenge<sup>3</sup>  
<sup>1</sup>Tennessee State University, Nashville, Tennessee, United States; <sup>2</sup>Tennessee State University, Nashville, Tennessee, United States; <sup>3</sup>Tennessee State University, Nashville, Tennessee, United States



## POSTERS

- 472P **Cecal Colonization by Salmonella Enteritidis in Commercial Layer Pullets Fed with a Mannan-Rich Fraction**  
Daniel Graugnard<sup>1</sup>, Ronan Power<sup>1</sup>, W.D. King<sup>1</sup>, Ann Wooming\*<sup>1</sup>, Karl Dawson<sup>1</sup>  
<sup>1</sup>Alltech, Inc, Nicholasville, Kentucky, United States
- 473P **Antibiotic resistance, biocide susceptibility, and genomic characterization of Klebsiella spp. from broiler chicken farms**  
Shabnam Shamriz<sup>1</sup>, Camélie Maillot<sup>2</sup>, Xianhua Yin<sup>1</sup>, Gabriel Wajnberg<sup>3</sup>, Emil Jurga<sup>3</sup>, Chad Laing<sup>3</sup>, Catherine Carillo<sup>4</sup>, Moussa S. Diarra\*<sup>1</sup> <sup>1</sup>Guelph Research and Development Center, Agriculture and Agri-Food Canada, Guelph, Ontario, Canada; <sup>2</sup>Department of Biology, Faculty of Science, University of Sherbrooke, Sherbrooke, Quebec, Canada; <sup>3</sup>National Centre for Animal Diseases, Canadian Food Inspection Agency, Lethbridge, Alberta, Canada; <sup>4</sup>Ottawa Laboratory (Carling), Canadian Food Inspection Agency, Ottawa, Ontario, Canada
- 474P **Food Safety Risks and Antimicrobial Resistance of Salmonella, E. coli, and S. aureus in Broilers, Layers, and Water Sources**  
Jeffery Jackson<sup>1</sup>, Goodness Olakanmi<sup>1</sup>, Pramir Maharjan<sup>2</sup>, Elijah Ayilaran<sup>1</sup>, Agnes Kilonzo-Nthenge\*<sup>1</sup> <sup>1</sup>Tennessee State University, Nashville, Tennessee, United States; <sup>2</sup>Texas A&M, College Station, Texas, United States
- 475P **Comparing drug-resistant strains of Salmonella Infantis and Salmonella Schwarzengrund for their efficacy to colonize ceca and disseminate internal organs in growing turkeys**  
Amritha Ajayan\*<sup>1</sup>, DHANANJAI MURINGATTU PRABHAKARAN<sup>2</sup>, Peter Bina<sup>3</sup>, Hamza Javaid<sup>4</sup>, Anup Kollanoor Johnny<sup>5</sup> <sup>1</sup>University of Minnesota, Saint Paul, Minnesota, United States; <sup>2</sup>UNIVERSITY OF MINNESOTA, Saint Paul, Minnesota, United States; <sup>3</sup>University of Minnesota, Falcon Heights, Minnesota, United States; <sup>4</sup>University of Minnesota, Saint Paul, Minnesota, United States; <sup>5</sup>University of Minnesota, Woodbury, Minnesota, United States

## Poster Session IV

Monday, July 13 · 10:00 AM · 106 & 107 Constitution Hall

- 476P **Specialty protein sources in starter feeding program have transient effects on cecal metabolomics in broiler chickens**  
Reza Akbari Moghaddam Kakhki\*<sup>1</sup>, Anastasia Tsementzis<sup>2</sup>, Elijah G. Kiarie<sup>2</sup>  
<sup>1</sup>Université de Montréal, Saint-Hyacinthe, Quebec, Canada; <sup>2</sup>University of Guelph, Guelph, Ontario, Canada
- 477P **Linoleic acid:alpha-linolenic acid ratios associated with vitamin E levels on bone quality of quail breeder hens**  
Letícia A. Silva\*<sup>1</sup>, Vinicio d. Cardoso<sup>3</sup>, Allanna H. Corsino<sup>1</sup>, Tatiana C. Santos<sup>2</sup>  
<sup>1</sup>Universidade Estadual de Maringá, Maringá, Paraná, Brazil; <sup>2</sup>State University of Maringá, Maringá, PR, Brazil; <sup>3</sup>State University of Maringá, Maringá, Paraná, Brazil



## POSTERS

- 478P **Effect of In-ovo Feeding on the Market-age Growth Performance and Muscle Development of Broilers: A Systematic Review and Meta-analysis**  
Liang-en Yu\*<sup>1</sup>, Yuan-Yu Lin<sup>1</sup> <sup>1</sup>*National Taiwan University, Taipei, Taiwan*
- 479P **Comparison of Metabolizable and Net Energy Systems Using Different Metabolic Weight Exponents (W0.75 vs W0.70 ) in Modern Broilers: Effects on Growth Performance and Energy Partitioning Under Different Dietary Profiles**  
Vanessa Basurco\*<sup>1,2</sup> <sup>1</sup>*Universidad Nacional Agraria La Molina, Lima, Lima, Peru;* <sup>2</sup>*San Fernando S.A., Lima, Lima, Peru*
- 480P **Crude protein level determines the impact of raw potato starch on amino acid digestibility during acute phase Eimeria acervulina challenge**  
Olanrewaju Ayinde\*<sup>1</sup>, Oluyinka A. Olukosi<sup>2</sup>, Sujitha Veeraganti<sup>3</sup> <sup>1</sup>*University of Georgia, Athens, Georgia, United States;* <sup>2</sup>*University of Georgia, Athens, Georgia, United States;* <sup>3</sup>*University of Georgia, Athens, Georgia, United States*
- 481P **Stepwise replacement of soybean meal with canola meal in nutrient-adequate diets reduce growth performance, dependent on environmental stress**  
Olanrewaju Ayinde\*<sup>1</sup>, Oluyinka A. Olukosi<sup>2</sup>, June Hyeok Yoon<sup>4</sup>, Bhargavi Kasireddy<sup>3</sup> <sup>1</sup>*University of Georgia, Athens, Georgia, United States;* <sup>2</sup>*University of Georgia, Athens, Georgia, United States;* <sup>3</sup>*University of Georgia, Athens, Georgia, United States;* <sup>4</sup>*University of Georgia, Athens, Georgia, United States*
- 482P **Impact of reducing crude protein in diets of broiler chickens on nitrogen excretion and emissions: Insights from a meta-analysis**  
Jhonatan S. Inca<sup>1</sup>, NICEAS C. VILCHEZ\*<sup>1</sup> <sup>1</sup>*Universidad Nacional Agraria La Molina, Lima, Peru*
- 483P **An updated dynamic mechanistic model of male turkey growth and metabolism**  
Jihao You\*<sup>1</sup>, John Cant<sup>1</sup>, Elijah G. Kiarie<sup>1</sup>, Xuechun Bai<sup>2</sup>, Charlie d. Hollander<sup>2</sup>, Dan Tulpan<sup>1</sup>, Jennifer L. Ellis<sup>1</sup> <sup>1</sup>*University of Guelph, Guelph, Ontario, Canada;* <sup>2</sup>*Hybrid Turkeys, Kitchener, Ontario, Canada*
- 484P **Nutritional value of dried extruded-expelled soybean meal and the effects of multi-carbohydrases on its utilization in broilers and laying hens**  
Poonam Neupane\*<sup>1,6S</sup>, Yanxing Niu<sup>1</sup>, Kemi S. Kanani<sup>1</sup>, Robert Patterson<sup>2</sup>, Bogdan A. Slominski<sup>1</sup>, Anna Rogiewicz<sup>1</sup> <sup>1</sup>*University of Manitoba, Winnipeg, Manitoba, Canada;* <sup>2</sup>*CBS Bio Platforms Inc., Calgary, Alberta, Canada*
- 485P **Cecal microbiota profiles in broiler breeder hens on three feeding regimens**  
Diane Hildenberger\*<sup>1</sup>, Madison Berger<sup>2</sup>, Jessica Starkey<sup>2</sup>, Charlene Hanlon<sup>2</sup>, Philip Campos<sup>1</sup>, Monika Proszkowiec-Weglarz<sup>1</sup>, Kristen Diehl<sup>1</sup> <sup>1</sup>*ARS, USDA, Beltsville, Maryland, United States;* <sup>2</sup>*Auburn University, Auburn, Alabama, United States*
- 486P **Evaluation of the net energy system to predict the performance response in laying hens**  
Nilva Sakomura\*<sup>1</sup>, Rony Riveros<sup>1</sup>, Audasley Tadeu Santos Fialho<sup>1</sup>, Nathalia Rocha Silva<sup>1</sup>, Raully Lucas Silva<sup>1</sup> <sup>1</sup>*Sao Paulo State University, Jaboticabal, SP, Brazil*



## POSTERS

- 487P **Influence of neutral detergent fiber on the nitrogen-corrected apparent metabolizable energy of canola meal in broilers: a meta-analysis**  
Hector Salgado<sup>1</sup>, Marie Pierre Létourneau-Montminy\*<sup>1</sup> <sup>1</sup>*Université Laval, Quebec, Quebec, Canada*
- 488P **Optimizing growth and profitability of native Bangladeshi geese through Oat fodder supplementation and controlled feed restriction**  
Umme S. Ety\*<sup>3</sup>, Md. Sazedul K. Sarker<sup>3</sup>, Halima Khatun<sup>1</sup>, Sakib S. Zihan<sup>3</sup>, Aminul Islam<sup>3</sup>, Farhana Sharmin<sup>2</sup>, Nushrat N. Lisa<sup>3</sup> <sup>1</sup>*Bangladesh Livestock Research Institute, Savar, Dhaka, Bangladesh;* <sup>2</sup>*Bangladesh Jute Research Institute, Dhaka, Bangladesh;* <sup>3</sup>*Bangladesh Livestock Research Institute, Savar, Dhaka, Bangladesh, Dhaka, Dhaka, Bangladesh*
- 489P **The density of energy: protein ratio in the diet affects the metabolizability of nutrients in Japanese quail (*Coturnix japonica*)**  
Maria Guadalupe Zambrano-Velasco<sup>1</sup>, Arturo Pro-Martinez<sup>1</sup>, Jose Herrera Haro<sup>1</sup>, Omar Hernandez-Mendo<sup>1</sup>, Diego Zárate-Contreras<sup>1</sup>, Fernando Gonzalez-Ceron<sup>2</sup>, Victor Manuel Valdes-Narvaez\*<sup>3</sup>, Eliseo Sosa-Montes<sup>2</sup>, Benito Bello-Olivera<sup>2</sup> <sup>1</sup>*Colegio de Postgraduados, Texcoco de Mora, Mexico;* <sup>2</sup>*Universidad Autonoma Chapingo, Texcoco de Mora, Mexico;* <sup>3</sup>*Universidad de Investigación e Innovación de México, Texcoco de Mora, Mexico*
- 490P **Effects of digestible lysine content and oat hull inclusion in the diet on growth performance and gastrointestinal tract development of two pullet strains from 0 to 35 days of age**  
Juan Valle<sup>12</sup>, Guillermo Talegón<sup>2</sup>, Lourdes Cámara<sup>2</sup>, Nereida Luna Corrales<sup>2</sup>, Gonzalo González Mateos\*<sup>2</sup> <sup>1</sup>*Lohmann Breeders GmbH, Cuxhaven, Germany;* <sup>2</sup>*Universidad Politécnica de Madrid, Madrid, Spain*
- 491P **Regulation of phosphorus metabolism to mitigate osteoporosis and extend the laying cycle in aged laying hens**  
Béatrice Sauvé\*<sup>12</sup>, Vincent Demers-Caron<sup>2</sup>, Jacinthe Julien<sup>2</sup>, Marie Pierre Létourneau-Montminy<sup>1</sup>, Angel R. Alfonso Avila<sup>3</sup> <sup>1</sup>*Laval University, Québec, Quebec, Canada;* <sup>2</sup>*Animal Sciences Research Center of Deschambault, Deschambault, Quebec, Canada;* <sup>3</sup>*CRSAD, Deschambault, Quebec, Canada*



## POSTERS

- 492P **Effects of Dietary Nutrient Density and Probiotic Supplementation on Feed Efficiency, Processing Yield, and Myopathy Incidence in Broilers**  
 Sarah E. Johnson\*<sup>1GS</sup>, Jeremy Summers<sup>2</sup>, Joaquin J. Esquivel Vergara<sup>3</sup>, Rosie Whittle<sup>4</sup>, Karen M. Rivera<sup>5</sup>, Allison D. Weaver<sup>6</sup>, Benjamin Parsons<sup>7</sup>, Shawna Weimer<sup>8</sup>, Casey M. Owens<sup>9</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>2</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>3</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>4</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>5</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>6</sup>University of Arkansas, Fayetteville, Fayetteville, Arkansas, United States; <sup>7</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>8</sup>University of Arkansas, Fayetteville, Arkansas, United States; <sup>9</sup>University of Arkansas, Fayetteville, Arkansas, United States
- 493P **Organ-and Strain-Specific Response of Commercial and Native Chicken Strains to Heat Stress**  
 Yun-Ji Hwang<sup>12</sup>, Vaishali Gupta\*<sup>12</sup>, Meg A. Delmonte<sup>2</sup>, Chris Major Ncho<sup>21</sup>, Sang-Hyon Oh<sup>2</sup>, Yang-Ho Choi<sup>213</sup> <sup>1</sup>Gyeongsang National University, Jinju, Gyeongsangnam, Korea (the Republic of); <sup>2</sup>Gyeongsang National University, Jinju, Gyeongsangnam, Korea (the Republic of); <sup>3</sup>Gyeongsang National University, Jinju, Gyeongsangnam, Korea (the Republic of)
- 494P **Characterization of proteomics in hypothalamus of male broiler breeders divergently selected for low and high water efficiency**  
 Kentu Lassiter\*<sup>1</sup>, Sara Orłowski-Workman<sup>1</sup>, Maricela Maqueda<sup>1</sup>, Kirsten M. Shafer<sup>1</sup>, Elizabeth Greene<sup>1</sup>, Sami Dridi<sup>1</sup>, Walter G. Bottje<sup>1</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States
- 495P **Characterization of proteomics in hypothalamus of female broiler breeders divergently selected for low and high water efficiency**  
 Kentu Lassiter\*<sup>1</sup>, Sara Orłowski-Workman<sup>1</sup>, Maricela Maqueda<sup>1</sup>, Kirsten M. Shafer<sup>1</sup>, Elizabeth Greene<sup>1</sup>, Sami Dridi<sup>1</sup>, Walter G. Bottje<sup>1</sup> <sup>1</sup>University of Arkansas, Fayetteville, Arkansas, United States
- 496P **Estimating the ossification ratio of developing keel bones in laying hen pullets using deep learning and computer vision**  
 Ana K. Rentsch\*<sup>21</sup>, Dan Tulpan<sup>2</sup>, Santosh Pokhrel<sup>2</sup>, Grégory Y. Bédécarrats<sup>2</sup> <sup>1</sup>University of Guelph, Guelph, Ontario, Canada; <sup>2</sup>University of Guelph, Guelph, Ontario, Canada



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# PSA Awards & Honors

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2026 Award Recipients and Fellows



## PSA AWARDS & HONORS

### PSA FELLOW



## Nicholas B. Anthony

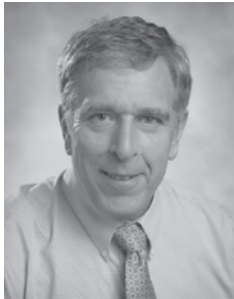
*Cobb-Vantress, Inc.*

Dr. Nicholas B. Anthony, a native of Wapakoneta, Ohio, has built a distinguished career in poultry breeding and genetics through decades of impactful contributions in both academia and industry. He earned his B.S. (1982) and M.S. (1985) in Poultry Science from The Ohio State University under the guidance of Dr. Karl Nestor, followed by a Ph.D. in Genetics from Virginia Tech in 1988 under Dr. Paul Siegel. Anthony joined the University of Arkansas in 1990 as an Assistant Professor after completion of a postdoctoral appointment at Ohio State. In 1999 he reached the rank of Full Professor. Over 29 years, he established a reputation for excellence in teaching, research, and leadership, serving as the first Director of the Bumpers College Honors Program. He taught a broad range of undergraduate and graduate courses in poultry science and genetics while leading graduate programs that produced 16 M.S. and 10 Ph.D. graduates. A defining feature of his teaching was preparing students for meaningful industry service by embedding them in applied research addressing real-world production challenges and emphasizing industry-relevant skills. His students are leaders in academia and industry. His teaching was recognized with numerous honors, including the John W. White Outstanding Teaching Award and the Poultry Science Association's Purina Mills Teaching Award. His research program has focused on the genetic and physiological consequences of selection for growth and efficiency in poultry, resulting in the development of innovative research populations to study traits such as ascites susceptibility, muscle quality, and feed efficiency. His efforts have resulted in more than 160 peer-reviewed publications and five presentations at the National Breeders Roundtable. His work includes a significant contribution to global genomic initiatives, including the Gallus gallus genome assembly, as part of the Vertebrate Genomes Project. Currently a Senior Geneticist in R&D at Cobb, Dr. Anthony continues to bridge academic discovery and industry application, exemplifying excellence in research, teaching, and professional service. Dr. Anthony served two terms as Section Editor for Breeding and Genetics section of the Poultry Science journal and continued as an Associate Editor. He has chaired the Genetics Section, organized scientific sessions, and contributed to major committees, including teaching and student manuscript awards, promoting scientific rigor and mentorship.



## PSA AWARDS & HONORS

### PSA FELLOW



## Shai Barbut

*University of Guelph*

Dr. Barbut is a Professor Emeritus at the University of Guelph, concluding a distinguished 40-year academic career. He also serves as a Special Professor of Poultry Meat Science at Wageningen University and contributes to several European Union research initiatives. Internationally recognized as a leading authority on poultry meat quality, he has authored more than 300 peer-reviewed publications and four books, including *The Science of Poultry and Meat Processing*, for which he is the sole author. The book is freely available online and has already approached one-million-chapter downloads from the English edition. It has also been translated into Spanish and Chinese, underscoring its global educational impact and its status as one of the most widely used meat science textbooks. His research is characterized by the application of scientific principles to practical industry challenges. Examples of contributions include reducing salt and fat in processed meats, developing strategies to utilize poultry meat affected by myopathies, and investigation new technologies to repurpose chicken collagen for use in automated co-extrusion sausage production. Dr. Barbut has been an active member of several professional organizations, including the Poultry Science Association—where he served on the Board of Directors, the American Meat Science Association, the Canadian Meat Science Association, and the Institute of Food Technologists. He has also served on several government committees and task forces. Over the course of his career, he taught approximately 10,000 undergraduate students and industry professionals in courses such as Poultry Meat Processing, Food Plant Sanitation, and Food Microbiology. At the graduate level, he supervised 50 Ph.D. and M.Sc. students. His expertise has been recognized through numerous honors, including induction into the Poultry Science Hall of Fame and election as a Fellow of the Institute of Food Technologists.



## PSA AWARDS & HONORS

### PSA FELLOW



## Douglas F. Britton

*Georgia Tech Research Institute*

Dr. Doug Britton is a Principal Research Engineer at the Georgia Tech Research Institute and Program Manager for the Agricultural Technology Research Program (ATRP) at Georgia Tech. He leads a portfolio of research focused on transformational innovation in advanced technologies for poultry, agribusiness, and food manufacturing. Working closely with partners in academia, industry, and public agencies, he identifies unmet needs across the food value chain and translates them into applied, impactful research initiatives. With expertise in image and signal processing, Britton led the development of several imaging-based systems for food processing applications, spanning citrus, baked goods, whole bird screening, and poultry product inspection. He is passionate about the future of poultry production and processing and the integration of emerging technologies into a highly optimized system. By creating environments where interdisciplinary teams can fundamentally rethink the production and processing chain, he fosters the cross-pollination of ideas that enable new methods and systems tailored to modern demands for safety, sustainability, and efficiency. Britton received a B.S. in Engineering from LeTourneau University, an M.S. in Electrical Engineering from the University of Tennessee, and a Ph.D. in Electrical Engineering from the Georgia Institute of Technology. In addition to being a member of the Poultry Science Association (PSA) where he served as Secretary and Treasurer from 2019–2025, he is a member of the Institute of Electrical and Electronics Engineers (IEEE), and is a Fellow of the Food Systems Leadership Institute (FSLI). He was also inducted into the LeTourneau University Academy of Engineering. Britton co-chairs the International Food Automation Networking Conference (IFAN), serves on industry advisory boards, sits on the USPOULTRY Safety & Health Council, and co-organizes the annual National Safety Conference for the poultry industry. Outside of work, Britton enjoys time with his wife, Susan, and their three adult children. His interests include family activities, serving at church, sailing, fly fishing, coaching volleyball, and travel.



## PSA AWARDS & HONORS

### PSA FELLOW



### Jesse L. Grimes

*North Carolina State University*

Dr. Jesse Grimes was born in Portsmouth VA in 1958. He was raised on the family farm near Scotland Neck in Halifax County NC. He experienced a typical farm rearing and worked in the fields of row crop farming including tobacco, peanuts, corn, and soybeans. He also experienced livestock production with hands-on work with swine and some beef cattle. Jesse also enjoyed the outdoor life of hunting and fishing. He graduated high school from Hobgood Academy in 1976. Graduation from NC State University followed with a BS degree in Wildlife Biology in 1980 and a BS degree in Poultry Science in 1981. He gained invaluable experience in broiler production and the poultry industry by working as a broilerservice supervisor for Perdue Farms in the Lewiston, NC complex from 1981 to 1984. Jesse entered Graduate School at NC State University in 1984 under the direction of the late Dr. Jon Ort with nutrition as his major with his research concentrated in turkey breeder hens. Upon completing his PhD, Dr. Grimes served on the faculty at Clemson University from 1989 to 1994 as an Extension Scientist working with commercial layers. In 1994, he began his faculty employment at NC State University in the Prestage Department of Poultry Science as an Extension Turkey Specialist. He served as Departmental Extension Leader, Departmental Director of Graduate Programs, and Talley Turkey Education Unit faculty liaison. Dr. Grimes work included turkey nutrition, turkey management, and waste management. He also coordinated the annual NC Turkey Industry Days Conference for over 30 years. He enjoyed working with the turkey industry, poultry allied industry, and numerous faculty, staff, and students on many diverse projects. Dr. Grimes taught Meat Bird Production (broilers and turkeys) and Gamebird Production in alternate years. He enjoyed mentoring many undergraduate and graduate students during his career. Dr. Grimes is a certified animal welfare auditor and is active as an auditor educator as well as serving as a professional auditor in poultry operations. Dr. Grimes retired January 1, 2026. He and he wife Ruth Ann reside in the Raleigh, NC, area.



## PSA AWARDS & HONORS

### PSA FELLOW



## Casey M. Owens

*University of Arkansas*

Dr. Casey Owens received her B.S. degree in Poultry Science and her M.S. and Ph.D. degrees in Food Science and Technology from Texas A&M University in 1994, 1996, and 1999, respectively. She has been on faculty in the Department of Poultry Science at the University of Arkansas/Division of Agriculture since 2000, and currently serves as Professor and holds the Novus International Professorship of Poultry Science. She has been a member of PSA for over 30 years. Owens' research has a strong emphasis on evaluating production and processing factors affecting poultry meat quality including tenderness, water holding capacity, color and sensory attributes. Her recent research has focused on quality of meat from broilers in big bird market programs including muscle myopathies such as white striping and woody breast, and issues with meat texture including technologies to detect myopathies in poultry meat. She has received the National Chicken Council Broiler Research Award based on this research in 2016. Past research has included meat tenderness and methods for assessing meat tenderness with the development of the Meullenet Owens Razor Shear, and the use of marination in poultry meat for improved meat quality. In addition to her research, Dr. Owens teaches Egg and Meat Technology and Value Added Muscle Foods at the undergraduate and graduate levels for students in Poultry Science, Food Science, and Animal Science. She also teaches industry workshops related meat and egg processing and further processing. She serves as the undergraduate curriculum chair and an academic advisor, and Dr. Owens has directed the research of numerous Ph.D. and M.S. graduate students in addition to undergraduate research.



## PSA AWARDS & HONORS

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### Alltech Student Research Manuscript Award

Given to a graduate student for the presentation and publication, as senior author, of an outstanding research manuscript in Poultry Science or The Journal of Applied Poultry Research.



**Sameeha Jhetam**  
*University of Saskatchewan*

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### American Egg Board Research Award

Given to a recipient who has increased interest in research pertaining to all things related to the egg, including egg production, safety, product quality, or egg science technology. An annual award.



**Javier S. Garcia**  
*USDA-ARS*

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### American Poultry Historical Society Award

Recognizes outstanding contributions to preserving the history and heritage of poultry science and the poultry industry.



**Paul B. Siegel**  
*Virginia Tech*





## PSA AWARDS & HONORS

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### Andrew F. Giesen III Poultry Science Undergraduate Internship

Supports an outstanding undergraduate student pursuing hands-on internship experience in poultry science.



**Allie Bowerman**  
*University of Arkansas*

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### Evonik Award for Achievement in Poultry Science

An annual achievement award for distinctive contributions to the advancement of poultry science, covering a period of not more than seven years preceding the award.



**Dianna V. Bourassa**  
*Auburn University*

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### The James H. Denton Distinguished Service Award

Recognizes a pattern of significant, continuous, dedicated contributions by an individual to the success, well-being, and advancement of the Poultry Science Association and/or PSA Foundation.



**John Carey**  
*Texas A&M University*





## PSA AWARDS & HONORS

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### Maurice Stein Fellowship Award

Given to a graduate student whose training and research in applied poultry sciences may lead to improvements in the efficiency and profitability of the egg industry.



**Hayley Sutherland**  
*Purdue University*

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### National Chicken Council Broiler Research Award

Recognizes distinctive research work that has had a strong economic impact on the broiler industry.



**Wilmer A. Pacheco**  
*Auburn University*

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### Novus International Teaching Award

Recognizes that excellence in teaching is basic to the future welfare of the poultry industry, and aids continued professional improvement through travel, study, and other means. An annual award.



**Casey M. Owens**  
*University of Arkansas*





## PSA AWARDS & HONORS

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### Phibro Extension Award

Recognizes PSA members for conducting an outstanding program of work in poultry extension and outreach over a five-year period. An annual award.



**Wilmer A. Pacheco**

*Auburn University*

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### PSA Early Achievement Award for Research

Recognizes the achievements of a PSA member in the early stages of his or her career in research.



**Li Zhang**

*Mississippi State University*

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### PSA Early Achievement Award for Teaching

Recognizes the achievements of a PSA member in the early stages of his or her career in teaching.



**Tim Boltz**

*Mississippi State University*

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## PSA AWARDS & HONORS

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### PSA Pathfinder Award

Recognizes an individual for significant, influential contributions to the promotion and evolution of poultry science as a discipline and a profession.



**Greg Mathis**

*Southern Poultry Research, Inc.*

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### USPOULTRY Distinguished Poultry Industry Career Award

Recognizes distinctive, outstanding contributions by an industry leader based upon a broad contribution to the poultry industry.



**Bob Buresh**

*Retired*

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### National Turkey Federation Research Award

Recognizes distinctive research that advances and benefits the turkey industry.



**Anup Kollanoor Johnny**

*University of Minnesota*

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## PSA AWARDS & HONORS

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### **AFIA Poultry Nutrition Research Award**

Recognizes distinctive work demonstrating sound research in poultry nutrition over the last 10 years. An annual award.



**Michael Kidd**  
*University of Arkansas*

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### **Tyson Foods Inc. Support Personnel Award**

Acknowledges the contributions of support personnel and recognizes outstanding support of research, extension, or teaching programs in poultry science. An annual award.



**Justin Blankenship**  
*University of Arkansas*

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# PSA OFFICERS, DIRECTORS & COMMITTEES

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- Director:** José Otávio Sorbara (2028)
- Sr. Student Director:** Pravin Mishra (2026)
- Jr. Student Director:** Alexandra "Ally" Jackson (2027)

## PSA Committees

### American Egg Board Research Award / Maurice Stein Fellowship Award

- Rajesh Jha, Chair**
- Claudia S. Dunkley
- Linnea Tracy
- Alysson Polzonoff
- Steven C. Ricke
- Kristen Wharton, American Egg Board Award Representative
- Chad Gregory, United Egg Producers Award Representative
- Deana R. Jones, Board Liaison

### American Feed Industry Association Poultry Nutrition Research Award

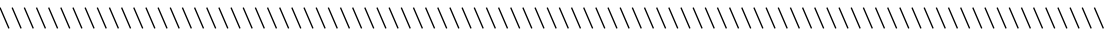
- Michael T. Kidd, Chair**
- Michael R. Bedford
- Michael E. Persia (FASS/AFIA Award Committee)
- Douglas R. Korver (FASS/AFIA Award Committee)
- Sergio L. Vieira
- José Otávio Sorbara, Board Liaison

### American Poultry Historical Society Award (even years)

- Sara Orłowski-Workman, Chair**
- Karen D. Christensen
- Brett Lumpkins
- Sara Cloft
- Janet E. Fulton
- Anita Menconi, Board Liaison

### Aviagen North America Undergraduate Scholarship

- TBD, Chair**
- TBD





## COMMITTEES

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Pravin Mishra, Senior Student Director, does not participate in Award selections

Kayla R. Price, Alltech Award Representative

Marisa Erasmus, Board Liaison

### Cobb-Vantress Graduate Fellowship Award

#### TBD, Chair

TBD

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Edgar O. Oviedo-Rondon, President, Trustee, Elected

Lisa R. Bielke, Trustee, Elected, PSA Foundation Representative

Birenda Mishra, Trustee, PSA Appointment

Cristiano Bortoluzzi, Trustee, Elected

Wilmer J. Pacheco, Trustee, Elected

Andrea Rubio, Trustee, PSA Appointment

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Sally Noll

Donald R. McIntyre

Valerie L. Carney

Michael J. Wineland

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# COMMITTEES

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Lin Walker  
Salim M. Bootwalla  
Yan Campbell  
Deana R. Jones, Board Liaison

## Committee on Poultry Well-Being

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Prafulla Regmi  
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Allison Pullin  
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Sami Dridi, 2nd Vice President  
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José Otávio Sorbara, Director

## Diamond V Undergraduate Scholarship

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Laura E. Ellestad  
Colin G. Scanes  
TBD  
Judd Powell, Diamond V Representative

## Evonik Corporation Award for Achievement in Poultry Science

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Jianmin Yuan  
Ryan Arsenault  
Victor D. Naranjo, Evonik Representative  
Deana R. Jones, Board Liaison

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John W. Boney  
Jonathan Moyle  
Juan DeVillena

Yan Campbell  
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Marisa Erasmus, Board Liaison



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Sami Dridi, 2nd Vice President  
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Sydney Carr, Director of Operations  
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John W. Boney  
Carolin Adler  
Gregory Y. Bedecarrats  
Lisa R. Bielke, USA Branch of the WPSA  
Gregory P. Martin  
Hugo Romero  
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Don McIntyre, Interim Executive Director

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Tom E. Porter, Acting Chair for 1-year

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Douglas R. Korver, Board Liaison

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Adam Burnsed  
Joshua Deines  
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Maria Terra-Long  
Nath Morris, USPOULTRY Representative  
Anita Menconi, Board Liaison



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- Birendra Mishra
- Karen Schwean-Lardner
- Yuan-Yu Lin
- Robert L. Taylor, Jr.
- Brian D. Fairchild, JAPR Editor-in-Chief
- Michael H. Kogut, PS Editor-in-Chief
- Barbara Tzschentke, EPS Editor-in-Chief
- Annis Moreira, Elsevier Representative
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### Maple Leaf Farms Duck Research Award (odd years) / National Turkey Federation Research Award (even years)

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- Ahmed Abdel-Wareth
- Samiru S. Wickramasuriya
- Karen Schwean-Lardner
- Lindy Froebel, National Turkey Federation Award Representative
- Zachary S. Tucker, Maple Leaf Farms Award Representative
- Karen D. Christensen, Board Liaison

### Merck Animal Health Poultry Research Graduate Fellowship

**TBD, Chair**

TBD

### National Chicken Council Broiler Research Award

**Pratima Adhikari, Chair**

- Michael Blair
- Edgar O. Oviedo-Rondon
- Colwayne D. Morris
- Sunoh Che
- Ashley B. Peterson, National Chicken Council Representative
- Sami Dridi, Board Liaison

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- Tom E. Porter, Past President
- Brian D. Fairchild, Past President
- Darrin Karcher, Elected
- Dawn Koltes, Elected
- Kelley G. Wamsley, Elected





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**Ning Yang, Co-Chair, China**

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Sonia Liu, Australia

Amonrat Molee, Thailand

Takeshi Ohkubo, Japan

Guanghai Qi, China

Karen Schwean-Lardner, Canada

Jiangxia (Katie) Zheng, China

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Animal Health: Ruediger Hauck, United States & Gregory S. Fraley, United States

Genetics and Genomics: Amonrat Molee, Thailand & Huaijun Zhou, United States

Immunology: Khaled Abdelaziz, United States & Alexander B. Yitbarek, United States

Metabolism and Nutrition (Amino Acids, Vitamins and Minerals): Sonia Liu, Australia & Olayiwola Adeola, United States

Metabolism and Nutrition (Enzymes and Feed Additives): In Ho Kim, South Korea & Rajesh Jha, United States

Metabolism and Nutrition (General Nutrition): Guang-hai Qi, China & Elijah Kiarie, Canada

Microbiology and Physiology: Takeshi Ohkubo, Japan & Woo Kyun Kim, United States

Poultry Management, Waste, and Well-Being: Karen Schwean-Lardner, Canada & Lilong Chai, United States

Processing, Products, Meat and Egg Quality: Jiangxia (Katie) Zheng, China & Mary Anne Amalaradjou, United States

WPSA Lecture: Chuang Ma, China

*Ex officio:*

Jenny Paul, Conference Program Manager

Don McIntyre, Interim Executive Director

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### Program Committee (2026 Latin American Scientific Conference)

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*Ex officio:*

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Don McIntyre, Interim Executive Director

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### PSA Early Achievement Award for Research (even years)

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Abhinav Upadhyay

Timothy J. Broderick

Joshua Dienes

Daniel Sabo

Deana R. Jones, Board Liaison



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Muhammad Ali

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Animal Welfare and Behavior: Inga Tiemann

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Environment and Sustainability: Miriam Cerrillo Moreno

Food Safety and Products: Pawel Konieczka

Health and Immunology: Silke Rautenschlein

Incubation and Fertility: Shelly Druyan

Management and Production (Broiler): Sezen Özkan

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Physiology and Reproduction: Barbara Tzschentke

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Genetics and Molecular Biology: Sami Dridi, Monika Proszkowiec-Weglarz, Kristen Diehl and Li Zhang

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Rajesh Jha, Elijah Kiarie and Caven Mnisi

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# COMMITTEES

## Publication Committee for The Journal of Applied Poultry Research

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Health and Disease: Ruediger Hauck

Layer Management: Kenneth W. Koelkebeck

Meat Bird Management: Tom Tabler

Meat Bird Processing and Products: Dianna Bourassa

Microbiology and Food Safety: Aaron S. Kiess

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Specialty Markets and Production Systems: Garret Ashabranner

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TBD

LaToya J. Burrell, Zinpro Representative





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**Association for the Assessment and Accreditation of Laboratory Animal Care, International**

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**American Association for the Advancement of Science**

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**American Feed Industry Association**

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**American Institute of Biological Sciences**

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PSA Annual Meeting 2026

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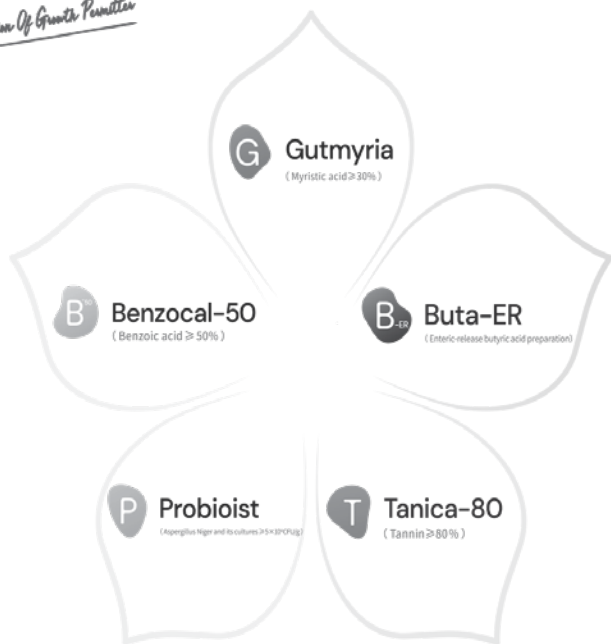
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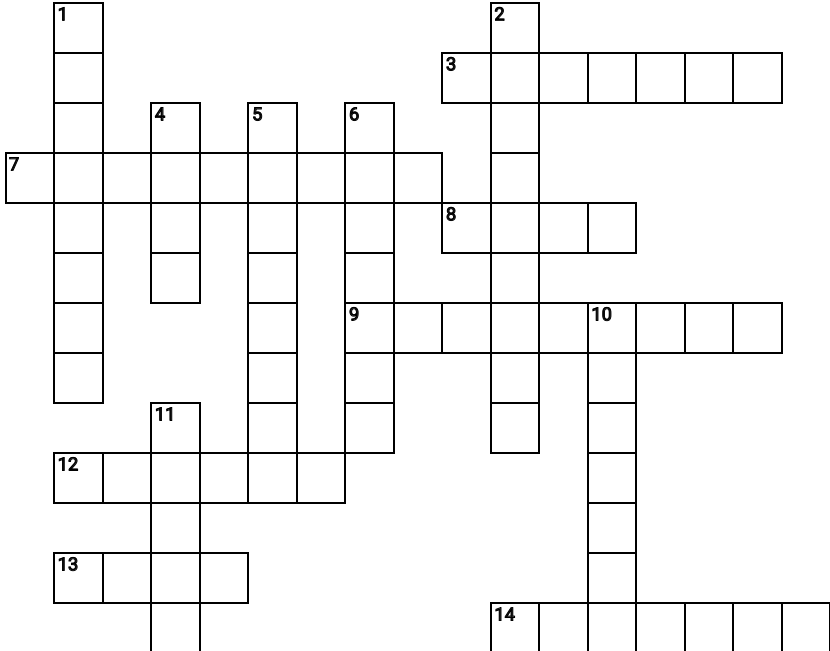


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### PSA 2026 ANNUAL MEETING SCAVENGER HUNT



#### Across

3. Go to: welcome reception
7. Ask a physiologist: housekeeping
8. Sister journal
9. Canadian winter sport
12. Dr. President
13. Ask a PSA staff: welcome!
14. Thank you, sponsor!

#### Down

1. Go to: job postings board
2. Canadian wonderland
4. Go to: upload room
5. Ask a board member: interim
6. Ask a Canadian: donut holes
10. Toronto attraction
11. Go to: PSA booth

**\*Please be respectful and professional when approaching people!**

**How to play:** Complete the crossword. Some of these are interactive! You will need to visit a location or chat with one another!

**Turn in your completed sheet at the registration desk on Monday, July 13 between 8am and 12pm for your chance at 1 of the 3 prizes!**

- 1st place: free registration and BBQ ticket for the 2027 PSA Annual Meeting
- 2nd place: free registration for the 2027 PSA Annual Meeting
- 3rd place: free BBQ ticket for the 2027 PSA Annual Meeting

Winners will be drawn and notified after the deadline.