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MEET US IN MACAU



2025 PSA PACIFIC RIM SCIENTIFIC CONFERENCE

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ABSTRACTS & POSTERS

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President's Welcome

On behalf of the Board of Directors, the Annual Meeting Program Committee, and PSA staff, thanks for coming to Raleigh for the 2025 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. Laura Ellestad and the Annual Meeting Program Committee have put together another exciting program for this year's meeting. After the kick-off WPSA lecture, you will be able to choose from a variety of presentations on topics such as Avian

Influenza, immunity, genetics, reproduction, nutrition, gut health, processing, smart farming technologies, and more. Almost 600 accepted abstracts will be organized into 398 talks and 128 posters to be presented by students and senior scientists, and 70 talks in 12 symposia. Student competitions will take place on Monday and Tuesday; symposia and workshops will be held throughout the week. Each oral presentation section will start with big picture context from an invited speaker. To enhance your experience, we will be testing an electronic poster session for the first time. Breaks this year will be longer than usual to accommodate the new poster format. We hope that you find this year's program relevant and stimulating.

In addition to scientific talks and poster presentations, there will be social events to promote networking and to enjoy catching up with friends and colleagues. The Welcome Reception will take place on Monday and the Exhibitor and Poster Viewing Reception along with the Student Hatchery Mixer will take place on Tuesday. On Wednesday we invite you to enjoy the Ice Cream Social and the BBQ, which will be held at the North Carolina Museum of Natural Sciences - Nature Exploration Center. The PSA BBQ will be a fun time to eat great comfort food and explore the science museum. In addition, we have several ticketed networking lunches and Lunch and Learn events. To show appreciation to manuscript reviewers and committee chairs, we will host an invitation only Reviewer Reception and a Committee Chairs luncheon. The volunteers that serve in these capacities are crucial to the success of the PSA. The first annual Presidential Symposium will cap the scientific program, which will be followed by a "Sips for Scholarsips" fundraiser and the PSA Awards Celebration on Thursday evening.

The PSA staff have done an excellent job of coordinating the logistics of this year's meeting. Thank you to Andy Vance (Executive Director), Jon Cole (Director of Business Operations), Rebecca Smith (Membership and Meetings Manager), Sydney Carr (Accounting and HR Manager), Lyndsey Johnston (Director of Communications), Isabella Woolslayer (Member & Admin Services Manager) and David Busboom (Managing Editor) for all their hard work and dedication in preparing for this meeting. Thank you to the PSA leadership and the Annual Meeting Program Committee for all your efforts in planning this year's program. The Poultry Science Association Board of Directors would also like to extend their gratitude to our sponsors. Please take a minute to thank representatives from sponsoring companies who are attending the meeting.

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

Martin J. Zuidhof
PSA President 2024-2025

2025 Annual Program Committee

Thank you to Laura and her program committee for their selfless efforts on our behalf. Please take a minute to express your appreciation when you see them this week.

Laura E. Ellestad, General Program Chair (2025 – Raleigh)

Elijah Kiaire, General Program Chair-Elect (2026 – Toronto – with WPC)

Deana R. Jones, General Program Chair-Elect (2027 – Fort Worth – Joint with AAAP)

Prafula Regmi, Animal Well-Being and Behavior

Jessica B. Wells, Extension and Instruction

Monika Proszkowiec-Weglarz, Genetics and Molecular Biology

Daniel S. Adams, Immunology, Health and Disease (Feed Additives)

Lisa R. Bielke, Immunology, Health and Disease (Health and Disease)

Jarred Oxford, Immunology, Health and Disease (Immunology)

Gregory S. Fraley, Management and Production Roshan

Adhikari, Metabolism and Nutrition (Amino Acids)

Kelley G. Wamsley, Metabolism and Nutrition (Enzymes)

Cristiano Bortoluzzi, Metabolism and Nutrition (Feed Additives)

Chongxiao (Sean) Chen, Metabolism and Nutrition (General Nutrition)

Pratima Adhikari, Metabolism and Nutrition (Vitamins and Minerals)

Michael Rothrock, Microbiology and Food Safety Charlene Hanlon, Physiology and Reproduction

Tomi Obe, Processing and Products

Douglas R. Korver, Informal Nutrition Symposium

Zachary T. Williams, National Extension Workshop

Robert C. Van Wyhe and Bruce M. Rathgeber, WPSA Lectureship

Elijah Kiaire, Student Competition

Martin J. Zuidhof, PSA President (ex officio)

Schedule at a Glance

Please refer to the scientific portion of this program book for detailed information on oral and poster presentations. Please note that all rooms and times are subject to change. Always be sure to check room signs and the daily newsletter for any last-minute room changes or cancellations.

Any event noted with an asterisk (*) will require a ticket for entrance.

Friday, July 11

3:00 PM - 6:00 PM	PSA Finance Committee.... Governor's Board Room (Raleigh Marriott City Center)
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Saturday, July 12

7:00 AM - 8:00 AM	Board of Directors BreakfastChancellor (Raleigh Marriott City Center)
8:00 AM - 5:00 PM	PSA Board of Directors Meeting.... Congressional Room (Raleigh Marriott City Center)
12:00 PM - 1:00 PM	PSA Board of Directors Luncheon.....Chancellor (Raleigh Marriott City Center)

Sunday, July 13

7:00 AM - 8:00 AM	PSA Board of Directors Breakfast . Congressional Room (Raleigh Marriott City Center)
8:00 AM - 5:00 PM	PSA Board of Directors Meeting.... Congressional Room (Raleigh Marriott City Center)
12:00 PM - 1:00 PM	PSA Board of Directors Lunch... Chancellor (Raleigh Marriott City Center)
2:00 PM - 6:00 PM	Registration Opens .. Registration Area & Registration Area & Main Lobby
2:00 PM - 6:00 PM	Upload and Preview Room..... Registration Area & Main Lobby
4:00 PM - 8:00 PM	Exhibitor & Poster Set Up..... Ballroom A & Ballroom Lobbies (Posters may be set between 4:00 PM and 8:00 PM)

Monday, July 14

7:00 AM - 5:00 PM	Upload and Preview Room..... Room 203
7:00 AM - 5:30 PM	Registration Registration Area & Main Lobby
6:00 AM - 7:30 AM	Exhibitor Setup Ballroom A
7:30 AM - 8:00 AM	Attendee Breakfast Ballroom A
7:30 AM - 6:30 PM	Exhibitor & Poster Hall Open Ballroom A
8:00 AM - 8:30 AM	Opening Session Ballroom B
8:30 AM - 9:30 AM	WPSA Lecture: Legal challenges in animal agriculture: Implications the . poultry industry..... Ballroom B
9:30 AM -10:15 AM	Break.....Ballroom A
10:15 AM - 12:00 PM	Symposium: Gut check: Exploring tools, Ballroom B techniques, and future directions in microbiome research

10:15 AM - 5:30 PM	Oral Abstract Presentations	Various Rooms
12:15 PM - 1:15 PM	Lunch & Learn sponsored by Anitox*	Room 402
12:15 PM - 1:15 PM	National Extension Luncheon*	Room 304
1:15 PM - 5:30 PM	Informal Nutrition Symposium: Dynamic feed formulation in commercial poultry nutrition	Ballroom B
1:15 PM - 5:30 PM	Symposium: The many facets of glucocorticoid actions from stress and beyond	Ballroom C
3:15 PM - 4:00 PM	Break	Ballroom A
5:30 PM - 7:00 PM	Welcome Reception & Poster Viewing	Ballroom A & Ballroom Lobbies
7:00 PM - 9:00 PM	Alltech Showing	Ballroom B

Tuesday, July 15

7:00 AM - 5:00 PM	Upload and Preview Room	Room 203
7:00 AM - 5:30 PM	Registration	Registration & Main Lobby
7:30 AM - 6:30 PM	Exhibitor & Poster Hall Open	Ballroom A
7:00 AM - 8:00 AM	Editorial Board Breakfast*	Room 201
8:00 AM - 12:00 PM	Symposium: The feed milling process: A focus on pelleting, liquid applicaiton, and their effects on animal production	Ballroom B
8:00 AM - 12:00 PM	Symposium: Current perspectives on the control of Avian Influenza in the poultry industry	Ballroom C
8:00 AM - 5:00 PM	Oral Abstract Presentations	Various Rooms
10:00 AM - 10:45 AM	Break	Ballroom A
10:30 AM - 12:00 PM	WPSA-USA Board Meeting	Room 206
12:15 PM - 1:15 PM	WPSA-Canada & WPSA-USA Luncheon	Room 304
12:15 PM - 1:15 PM	Pacific Rim Networking Luncheon	Room 402
1:15 PM - 5:00 PM	Symposium: The inflammation saga: Breakthrough nutritional insights for poultry	Ballroom B
1:30 PM - 5:00 PM	Symposium: Emerging technologies in poultry genomics: Unlocking innovation for the future of sustainable production	Ballroom C
3:15 PM - 4:00 PM	Break	Ballroom A
5:30 PM - 7:00 PM	Exhibitor & Poster Viewing Reception	Ballroom A
8:00 PM - 11:00 PM	Student Hatchery Mixer*	Raleigh Beer Garden

Wednesday, July 16

6:30 AM - 7:30 AM	PSA Business Meeting Breakfast	Ballroom B
7:00 AM - 8:30 AM	PSA Business Meeting	Ballroom B
7:00 AM - 5:00 PM	Upload and Preview Room	Room 203
7:00 AM - 3:30 PM	Registration	Registration Area & Main Lobby
7:30 AM - 3:30 PM	Exhibitor & Poster Hall Open	Ballroom A
8:30 AM - 9:00 AM	Break	Ballroom A

9:00 AM - 10:00 AM	Student Travel Award Meeting	Room 206
9:00 AM - 12:00 PM	Honoring Dr. Dibner: Pioneering poultry science and last influence on early nutrition, gut health and cellular metabolism	Ballroom B
9:00 AM - 12:00 PM	Symposium: Inflammation is not a 4-letter word: How to influence immunity while not compromising performance	Ballroom C
9:00 AM - 5:00 PM	Oral Abstract Presentations	Various Rooms
12:00 PM - 1:00 PM	Committee Chairs Luncheon*	Room 205
12:00 PM - 1:00 PM	Past Presidents Luncheon*	Room 201
12:00 PM - 1:00 PM	Latin American Networking Luncheon.....	Room 402
12:00 PM - 1:00 PM	Lunch & Learn Sponsored by Olmix	Room 304
1:00 PM - 5:00 PM	Symposium: A new focus on fiber in poultry: Is it a nutrient or antibutrient?	Ballroom B
1:00 PM - 5:00 PM	Symposium: Genetic bases for resistance and immunity to avian diseases.....	Ballroom C
3:00 PM - 3:30 PM	Ice Cream Social.....	Ballroom A
3:30 PM - 8:00 PM	Exhibit Booth Teardown.....	Ballroom A
4:00 PM - 5:00 PM	Journal Reviewer Reception.....	Room 202
5:45 PM - 9:00 PM	PSA BBQ*.....	North Carolina Museum of Natural Sciences - Nature Exploration Center

Thursday, July 17

6:00 AM - 7:00 AM	Group Yoga	Room 202
7:00 AM - 1:00 PM	Upload and Preview Room.....	Room 203
7:00 AM - 3:30 PM	Registration	Main Lobby
7:30 AM - 10:30 AM	Exhibitor & Poster Hall Open	Ballroom A
7:00 AM - 8:00 AM	PSA Fellows Reunion Breakfast*	Room 201
8:00 AM - 10:00 AM	PSA New Board Member Training.....	Room 206
8:00 AM - 12:00 PM	PSA Industry Research Forum: A conversation with our stakeholders (NCC, NTF, UEP, USPOULTRY)	Ballroom B
8:00 AM - 5:00 PM	Oral Abstract Presentations	Various Rooms
9:30 AM - 10:00 AM	Student Hatchery Business Meeting	Ballroom C
10:00 AM - 10:30 AM	Break	Ballroom A
10:20 AM - 12:00 PM	Student Workshop: Where can poultry science take you? Career pathways, preperation tips, and profile building strategies (open to all members)	Ballroom C
1:00 PM - 3:00 PM	Presidential Symposium:Precision Poultry Farming	Ballroom B
3:00 PM - 3:30 PM	Break	Ballroom Lobbies
5:30 PM - 9:00 PM	PSA Awards Celebration* ...	State Ballroom (Raleigh Marriott City Center)

Meeting Details & Hours

Registration

Located in main lobby of the Raleigh Convention Center

Sunday, July 13	2:00 PM - 6:00 PM
Monday, July 14.....	7:00 AM - 5:30 PM
Tuesday, July 15.....	7:00 AM - 5:30 PM
Wednesday, July 16.....	7:00 AM - 3:30 PM
Thursday, July 17	7:00 AM - 3:30 PM

Presentation Upload & Preview Room

Located in Raleigh Convention Center Room 203

Sunday, July 13	2:00 PM - 6:00 PM
Monday, July 14.....	7:00 AM - 5:00 PM
Tuesday, July 15.....	7:00 AM - 5:00 PM
Wednesday, July 16.....	7:00 AM - 5:00 PM
Thursday, July 17	7:00 AM - 1:00 PM

Exhibits & Poster Sessions

Exhibit Hall, Ballroom A, Second Floor of Raleigh Convention Center

Sunday, July 13 (Exhibit & Poster Setup).....	12:00 PM - 6:00 PM
Monday, July 14 (Exhibit & Poster Setup).....	6:00 AM - 7:30 AM
Monday, July 14.....	7:30 AM - 7:00 PM
Tuesday, July 15.....	7:30 AM - 7:00 PM
Wednesday, July 16.....	7:30 AM - 3:30 PM
Thursday, July 17 (Exhibit Tear-down).....	7:30 AM - 1:00 PM

Important Reminders

Badges

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

Photo Release Notice

Throughout the conference, PSA will have a photographer taking photos for publicity and awards purposes. If you do not wish to have your photo taken, please notify the photographer or feel free to step to the side until a photo has been captured.

E-Poster Presentation

Poster viewing will be held Monday morning through Thursday morning. Posters must be in place by 10:00 AM, Monday, July 14, 2025.

Presenting authors, including students, are REQUIRED to be present by their poster by the designated time on Monday or Tuesday. Failure to display an accepted poster and be present during the mandated poster time may result in rejection and removal of the abstract from the electronic version of the conference proceedings.

On-Site Presentation Upload and Presentation Preview

On-site presentation upload will be available. Files can be delivered to the **Presentation Upload Room located in Room 203** within the Raleigh Convention Center. You are encouraged to upload your presentation as early as possible. The deadline for uploading each presentation is based on the day and time of the session it is scheduled to be presented. Plan to have your presentation uploaded no later than the night before your assigned presentation time. No presentations will be loaded while sessions are in progress, between presentations, or during breaks. Audio/Visual staff will be available to help ensure presentations are uploaded correctly and will load presentations in assigned presentation rooms at the assigned presentation times.

All presentation files are to be brought to the Presentation Upload Room on a USB stick/drives for upload to the conference server. Presentations need to be PowerPoint (.ppt) files formatted to widescreen. Files will not be accepted via email either to the upload room or the presentation room. The use of personal laptop computers for presentations is NOT permitted, no exceptions.

Presentation preview is highly recommended for all presenters prior to giving a presentation. Laptops are available in the Presentation Upload Room for previewing presentations. Audio/Visual staff will be available for assistance.

Presentation Upload Deadlines

Day/Time of Presentation	Upload Deadline
Monday Morning Oral Presentations	Sunday before 6:00 PM
Oral Presentations in Morning Sessions (Tuesday–Thursday)	No later than 4:00 PM the day before the presentation.
Oral Presentations in Afternoon Sessions (Monday–Thursday)	Before 10:00 AM on the day of the presentation.

Attendance at the Meeting

The annual meeting is organized for the primary purposes of conducting the business of the Association and sharing of research-related information among the scientific community. This is a private meeting of the Poultry Science Association (PSA) for its members and invited attendees only. PSA reserves the right to refuse attendance to any individuals or groups whose interests are not aligned with PSA's mission to foster scientific advancement of the poultry sciences, the poultry industry, and related fields of scientific endeavor.

Continuing Education

This PSA Annual Meeting is worth up to 21 ARPAS Continuing Education Units.

Itinerary Planner

Through this digital schedule attendees may browse the presentation schedule by day and by section, review the daily schedule of presentations, and develop a customized itinerary of presentations that are of interest. Users will need to create a login and password if they wish to build their own itinerary, which will be accessible from both desktop and mobile devices (see *Mobile App* below for details).

You can download the itinerary planner from the PSA Website.

Mobile App

Once you arrive at the meeting download the “My Itinerary by ScholarOne” conference app from your mobile app store. This is the mobile-friendly version of the Itinerary Planner.

To use the PSA Mobile App, simply go to your mobile app store (depending on your mobile device this will vary). Search for and download the “MyItinerary by ScholarOne” app. Once downloaded, open the app and click on “PSA Annual Meeting” to open the event. With the app you can build your personal daily schedule, receive reminders and updates, find the session or event you are looking for, take notes, bookmark, and synchronize across your devices.

Health & Wellness

To ensure a healthy and safe conference for all of our attendees, presenters, exhibitors, sponsors, and stakeholders, for your convenience we have hand sanitizer and optional face masks available at the registration counter. Face coverings are not required, but we do ask that you please be respectful of those attendees who choose to wear a face covering. Additionally, we encourage all attendees to monitor their health and wellness accordingly. If you are experiencing any symptoms that may potentially be related to an illness, we encourage you to rest in your hotel room and continue monitoring your symptoms until they have subsided. The Association thanks everyone for their cooperation.

PSA 2025 Special Events

Opening Session

The opening session will take place at the Raleigh Convention Center on Monday morning, July 14, at 8:00 AM.

Please plan to attend for a great start for the 114th Poultry Science Association Annual Meeting.

Hatchery Business Meeting & Student Workshop

Join the PSA student members for the Hatchery Business Meeting. This is an exciting opportunity for the students of PSA to learn of ways to get involved with the Association and what the current student members have been working on. This will take place in Grand Ballroom B of the Raleigh Convention Center on Thursday, July 17 at 1:00 PM. The Hatchery Business Meeting will be followed by the Student Workshop.

Welcome Reception

This year the welcome reception will take place at the Raleigh Convention Center in the Exhibit Hall (Ballroom A) on Monday evening, July 14 from 5:30 PM to 7:00 PM. Join us for refreshments to kick off the start of the meeting!

Exhibitor and Poster Viewing Reception

Following the sessions on Tuesday afternoon, July 15, from 5:30 PM to 7:00 PM, light hors d'oeuvres will be served. Meet with exhibitors and view the latest scientific research in the poster sessions.

Student Hatchery Mixer

This is an excellent opportunity for PSA student members to get to know their peers and fellow members. Join the students at the Raleigh Beer Garden for the student mixer event.

PSA Business Meeting

The Poultry Science Association Business Meeting will take place on Wednesday morning, July 16, at 7:00 AM in Ballroom B of the Raleigh Convention Center. Results of the 2025-2026 PSA elections will be announced.

PSA BBQ

An Annual Meeting tradition, the PSA BBQ event is an exciting opportunity to socialize with your colleague and peers. Join PSA at the North Carolina Museum of Natural Sciences - Nature Exploration Center at 6:00 PM on Wednesday night, July 16. Enjoy delicious BBQ, a live band, and visit the exhibits centered around North Carolina's natural sciences! A limited number of tickets are available. Please be sure to have purchased your tickets in advance during the online registration process as **tickets are required for this event.***

PSA Awards Celebration

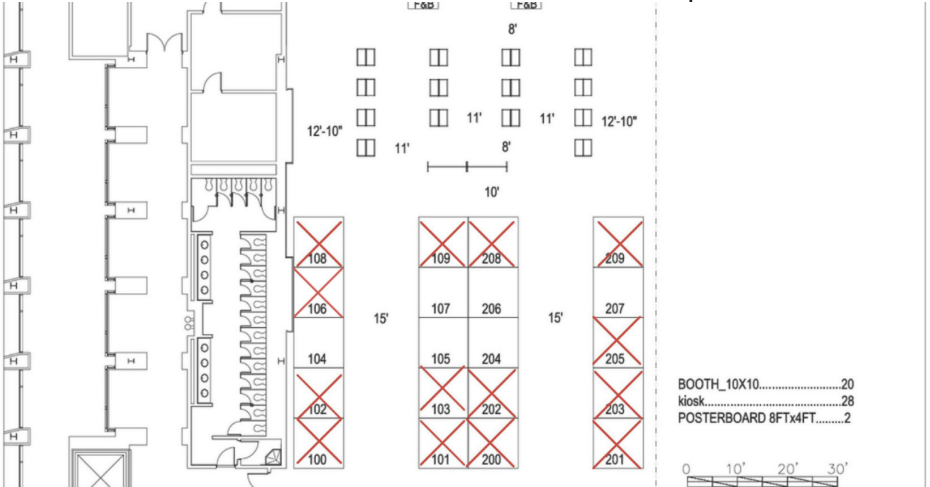
Please join us as we share an evening honoring the 2025 award winners. All meeting participants, spouses, and friends are welcome to attend this annual event. The celebration will be held on Thursday evening, July 17, at 5:30 PM in State Ballroom (Raleigh Marriott City Center). A limited number of tickets are available. Please be sure to have purchased your tickets in advance during the online registration process as **tickets are required for this event.***

2025 Annual Meeting Exhibitors Exhibit Hall

The Exhibit Hall Hours

Monday	7:30 AM - 7:00 PM
Tuesday	7:30 AM - 7:00 PM
Wednesday	7:30 AM - 3:30 PM

Exhibitor	Booth #
Adisseo	102
Alternative Design Manufacturing & Supply	101 & 200
Anitox	103
Evonik Corporation	108
Fortiva	201
Novus	106
Perstorp Animal Nutrition	109
OLMIX	100
2026 World’s Poultry Congress	208
PSA Journals & Elsevier	205
WATT Global Media	209
Poultry Science Association	202
MAPGlobal Media	202



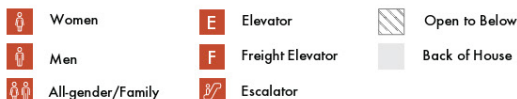
Raleigh Convention Center First Level Registration & Oral Abstract Rooms

MAIN (300) LEVEL



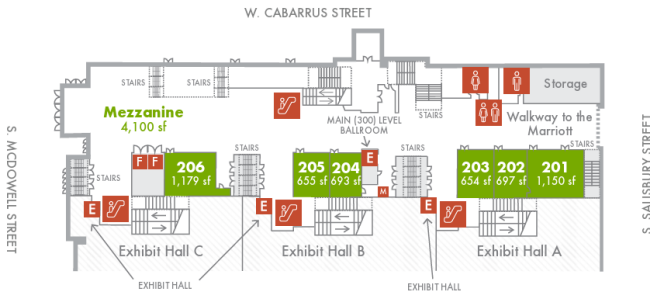
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|-------------------|------------------|---------------|
| Women | Elevator | Open to Below |
| Men | Freight Elevator | Back of House |
| All-gender/Family | Escalator | Mamava Pod |

BALLROOM LEVEL



Raleigh Convention Center
Upper Level
Luncheons & Oral Abstract Rooms

MEZZANINE LEVEL



Raleigh Convention Center
Upper Level
Luncheons & Oral Abstract Rooms

POULTRY SCIENCE ASSOCIATION

2025 Annual Meeting Scientific Program

July 14-17, 2025
Raleigh, North Carolina

2025 Annual Meeting Scientific Program

Monday, July 14

PSA Opening Session

Chair: Martin J. Zuidhof, University of Alberta

Ballroom B

8:00 AM

SYMPOSIA AND ORAL SESSIONS

WPSA Lecture: Legal challenges in animal agriculture: Implications for the poultry industry

Chairs: Bruce M. Rathgeber, Dalhousie University

Edgar O. Oviedo-Rondon, North Carolina State University

Grand Ballroom B

8:30 AM		Welcome Bruce M. Rathgeber, <i>Dalhousie University</i> Edgar O. Oviedo-Rondon, <i>North Carolina State University</i>
8:35 AM	527S	Legal challenges in animal agriculture: Implications for the poultry industry Elizabeth Rumley* ¹ ¹ <i>The National Agricultural Law Center, Fayetteville, Arkansas, United States</i>
9:20 AM		Questions and answers

Symposium: Gut check: Exploring tools, techniques, and future directions in microbiome research

Chair: Samson Oladokun, Texas A&M University

Grand Ballroom B

- 10:15 AM 528S **Chicken gut microbiota profiling: History and future directions**
Brian B. Oakley*¹ ¹Western University of Health Sciences, Pomona, California, United States
- 10:45 AM 529S **Next-Generation Sequencing (NGS) technologies for rapid microbiome profiling**
Cristiano Bortoluzzi*¹, Bertrand Grenier¹ ¹dsm-firmenich, College Station, Texas, United States
- 11:15 AM 530S **Deep learning models for understanding microbial communities**
Mahalingam Ramkumar*¹ ¹Mississippi State University, Mississippi State, Mississippi, United States
- 11:45 AM Roundtable discussion

Student Competition: Immunology, Health and Disease: Immunology

Moderator: Chrysta Beck, University of Arkansas

Room 301A-301B (Abstact Session Room A)

- 10:15 AM 1 **Development and evaluation of a bovine adenovirus-based avian influenza vaccine for poultry**
Olaitan C. Shekoni*¹, Ekramy Sayedahmed², Wen-Chien Wang², Jennifer Schrock¹, Alok Dhakal¹, Raksha Suresh¹, Sara Dolatyabi¹, Renick Wiltshire³, Megan Tenney¹, Ramon Zepgi-Lagos¹, Suresh Mittal², Renukaradhya Gourapura¹ ¹Ohio State University, Wooster, Ohio, United States; ²Purdue University, West Lafayette, Indiana, United States; ³College of Wooster, Wooster, Ohio, United States
- 10:30 AM 2 **Intradermal injection of peptidoglycan stimulates local and systemic inflammatory responses in turkeys: insights from a dual approach window**
Adeola A. Abe*¹, Chrysta N. Beck¹, Aaron Forga¹, Kasey A. Matusik¹, Delaney Roberts¹, Diego Cortes¹, Melissa Martinez¹, James Higuaita¹, Karen Echevarria¹, Danielle Graham¹, Gisela F. Erf¹, Jossie M. Santamaria¹ ¹University of Arkansas, Fayetteville, Arkansas, United States
- 10:45 AM 3 **Probiotic-induced microbiome modulation alters immune cell metabolism through the mevalonate pathway**
Lauren Anderson*¹, Tamara Pen², Anne Ballou³, Natalie Roberts¹, Matthew Koci¹ ¹North Carolina State University, Raleigh, North Carolina, United States; ²University of Surrey, Guildford, United Kingdom; ³Iluma Alliance, Durham, North Carolina, United States

- 11:00 AM 4 **Dietary Supplementation of Ginger Root Extract Reduced Intestinal *Salmonella* Colonization in Broiler Chicks**
Oluteru Orimaye^{*1}, Odinaka Iwuozo¹, Tunde E. Ogundare¹, Safiu Suberu¹, Oluwabunmi Apalowo¹, Ikenna Enenya¹, Deji A. Ekunseitan¹, Yewande Fasina¹ ¹*North Carolina A&T State University, Greensboro, North Carolina, United States*

Student Competition: Metabolism and Nutrition: General Nutrition I

Moderator: Ariel Bergeron, Adisseo

Room 302A-302B (Abstact Session Room B)

- 10:15 AM 5 **Macronutrient specific initiation of the metabolic switch in newly hatched chickens**
Parama Bhattacharjee^{*1}, Michaela Riedel¹, Tom Porter¹, Nishanth E. Sunny¹ ¹*University of Maryland, College Park, Hyattsville, Maryland, United States*
- 10:30 AM 6 **Western Canadian faba beans (*Vicia faba*) as a feedstuff for laying hens: A tale of two varieties**
Matt Oryschak^{*1}, Doug Korver¹² ¹*University of Alberta, Edmonton, Alberta, Canada*; ²*Alpine Poultry Nutrition, Inc., Edmonton, Alberta, Canada*
- 10:45 AM 7 **Maximizing 27 to 35 d growth performance and processing metrics of broilers with and without a subclinical necrotic enteritis challenge through corn particle size and feed quality**
Jorge A. Urrutia^{*1}, Timothy Boltz¹, Hudson Thames¹, Wilmer J. Pacheco², Ken Macklin¹, Christopher Magee³, Kelley G. Wamsley¹ ¹*Mississippi State University, Starkville, Mississippi, United States*; ²*Auburn University, Auburn, Alabama, United States*; ³*USDA-ARS Poultry Research Unit, Mississippi, Starkville, Mississippi, United States*
- 11:00 AM 8 **Full-fat soybean nutrient and antinutrient characterization and variability from two origins**
Caleb M. Marshall^{*1}, Virginie Blanvillain², Edgar O. Oviedo-Rondon¹ ¹*North Carolina State University, Raleigh, North Carolina, United States*; ²*AB Vista, Plantation, Florida, United States*
- 11:15 AM 9 **Evaluation of the effects of varied hemp seed cake inclusion on live performance parameters in female turkey poults reared to 5-weeks of age**
Corey Wishon^{*1}, Jesse L. Grimes¹, David Suchoff¹, Adam Fahrenholz¹ ¹*North Carolina State University, Raleigh, North Carolina, United States*; ²*North Carolina State University, Raleigh, North Carolina, United States*
- 11:30 AM 10 **Effects of dietary fiber and feed form on production parameters of turkey toms**
Juan F. Castro Baltodano^{*2}, Adam Fahrenholz¹, Jesse L. Grimes¹, Lisa R. Bielke¹, Allison Pullin¹ ¹*North Carolina State University, Raleigh, North Carolina, United States*; ²*North Carolina State University, Raleigh, North Carolina, United States*
- 11:45 AM 11 **Impact of pellet diameter and particle size on the performance and processing yield of broiler chickens**
Isabella de Camargo Dias^{*1}, Ana Carolina Britto Doi¹, Maria L. Bonadiman Mariani¹, Guilherme F. Deda¹, Brenda C. Pereira dos Santos¹, João P. Faleiros Ribeiro de Oliveira¹, Eduarda Gueber Rychaw¹, Alex Maiorka¹ ¹*Federal University of Paraná, Curitiba, Paraná, Brazil*

- 12:00 PM 12 **Effects of black soldier fly larvae meal inclusion on digestibility, live performance and carcass without giblets yield at 40d in Cobb 500 broilers**
Jose J. Yanquen Velasquez^{*12}, Lina M. Penuela Sierra¹, Jheinson A. Almanza Hernandez¹², Jimena A. Yepes¹, Yuliana M. Medina Sandoval², Angee M. Ramirez Ruiz², Luz C. Fandiño¹ ¹University of Tolima, Ibagué, Tolima, Colombia; ²Nutrición Experta de Colombia S.A.S, Armenia, Quindío, Colombia

Student Competition: Immunology, Health and Disease: Health and Disease I

Moderator: Maci Oelschlager, Cargill

Room 302C (Abstact Session Room C)

- 10:15 AM 13 **Effects of early supplementation of postbiotic on performance, gut morphology and expression of intestinal genes in broilers during subclinical necrotic enteritis**
Bingqi Dong^{*1}, Ali Calik¹², Rami A. Dalloul¹ ¹University of Georgia, Athens, Georgia, United States; ²Ankara University, Ankara, Turkey
- 10:30 AM 14 **Effects of green tea extract on performance and immune response during experimentally induced necrotic enteritis in broiler chicks**
Tunde E. Ogundare^{*1}, Raveendra Kulkarni², Safiu Suberu¹, Oluteru Orimaye¹, Odinaka Iwuozo¹, Oluwabunmi Apalowo¹, Samuel Quarmyne¹, Deji A. Ekunseitan¹, Yewande Fasina¹ ¹North Carolina A&T State University, Greensboro, North Carolina, United States; ²North Carolina State University, Raleigh, North Carolina, United States
- 10:45 AM 15 **Host immunological responses in Ross 308 broilers fed anti-IL-10 diet during *Eimeria maxima* and *Clostridium perfringens* challenge**
Michael Carroll^{*1}, Krysten Fries-Craft¹, Yuyang Cao¹, Melissa S. Monson², Stephan Schmitz-Esser¹, Elizabeth Bobeck¹ ¹Iowa State University, Ames, Iowa, United States; ²USDA, ARS, NADC, Ames, Iowa, United States
- 11:00 AM 16 **Effects of different *Eimeria maxima* infection doses on growth performance, gut and bone health in dual-infection model of necrotic enteritis in layer pullets**
Hemanth Reddy Katha^{*1}, Venkata Sesha Reddy Choppa¹, Hamid Reza Rafieian-Naeini¹, Doyun Goo¹, Hanseo Ko¹, Deependra Paneru¹, Venkata Prathap Reddy Keshava Reddy¹, Woo K. Kim¹ ¹University of Georgia, Athens, Georgia, United States
- 11:15 AM 17 **Growth kinetics assessment and NetB toxin quantification of necrotic enteritis-associated *Clostridium perfringens* strains**
Hamza Javaid^{*1}, Amritha Ajayan¹, Dhananjai Muringattu Prabhakaran¹, Anup Kollanoor Johny¹ ¹University of Minnesota, Saint Paul, Minnesota, United States
- 11:30 AM 18 **Evaluating the potential for vertical transmission of *Enterococcus cecorum* in broilers through microbiome analysis**
Muhammad Wajeeh Ul Hassan^{*1}, Lisa R. Bielke¹, Renata Gomes¹, Thaciane L. Amaral¹, Philip Yeboah², Nivedita Pareek³, Demilade I. Ibiwoye⁴ ¹North Carolina State University, Raleigh, North Carolina, United States; ²North Carolina State University, Raleigh, North Carolina, United States; ³University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, United States; ⁴North Carolina State University, Raleigh, North Carolina, United States

- 11:45 AM 19 **Effect of Oral and Intraperitoneal *Staphylococcus aureus* on Bacterial Chondronecrosis and Osteomyelitis, Broilers' Performance, Bone Health and Microbiome**
Venkata Sesha Reddy Choppa^{*1}, Jihwan Lee¹, Hamid Reza Rafieian-Naeini¹, Hanseo Ko¹, Doyun Goo¹, Deependra Paneru⁵, Hemanth Reddy Katha⁶, Woo K. Kim¹ ¹*University of Georgia, Athens, Georgia, United States*
- 12:00 PM 20 **Effect of heat stress on egg production, blood biochemistry, immune response, and disease susceptibility in cage-free laying hens infected with *Salmonella Enteritidis***
Bikash Aryal^{*1}, Shuja Majeed¹, Bikas R. Shah¹, Nimra Khalid¹, Lisa R. Bielke², QiuHong Wang¹³, Lingying Zhao³, Ali Nazmi¹³ ¹*Ohio State University, Wooster, Ohio, United States*; ²*North Carolina State University, Raleigh, North Carolina, United States*; ³*Ohio State University, Columbus, Ohio, United States*

Student Competition: Physiology and Reproduction I

Moderator: Lauren Vaccaro, University of Findlay

Room 303 (Abstact Session Room D)

- 10:15 AM 21 **Effects of delayed feeding and semi-purified diets on anterior pituitary mRNA expression in broiler chicks**
Michaela A. Riedel^{*1}, Parama Bhattacharjee², Nishanth E. Sunny¹, Tom Porter³ ¹*University of Maryland, College Park, Leonardtown, Maryland, United States*; ²*University of Maryland, College Park, Hyattsville, Maryland, United States*; ³*University of Maryland, College Park, Maryland, United States*
- 10:30 AM 22 ***In vitro* transcriptomic response of pituitary cells from low and high turkey egg producers to thyroid hormone and gonadotropin releasing hormone**
Ricardo G. Sierra^{*1}, Tom Porter¹, Kristen Diehl² ¹*University of Maryland, Beltsville, Maryland, United States*; ²*USDA-ARS, Beltsville, Maryland, United States*
- 10:45 AM 23 **Evaluation of estradiol concentrations during sexual maturation in cage-free pullets synchronized with body weight and photostimulation**
Olivia McGuire^{*2}, Clara J. Ziezold¹, Ana K. Rentsch¹, Grégoy Y. Bédécarrats¹, Charlene Hanlon² ¹*University of Guelph, Guelph, Ontario, Canada*; ²*Auburn University, Auburn, Alabama, United States*
- 11:00 AM 24 **Sperm mobility phenotype impact on broiler breeder sperm cell and seminal plasma proteome**
Arianna Bond^{*1}, Amy Shannon², Wesley Garrett², Julie A Long², Tom Porter³, Brenda Flack⁴, Isaac Harford⁴, Kristen Diehl² ¹*University of Maryland College Park, Laurel, Maryland, United States*; ²*USDA-ARS, Beltsville, Maryland, United States*; ³*University of Maryland, College Park, Maryland, United States*; ⁴*Cobb-Vantress, Siloam Springs, Arkansas, United States*
- 11:15 AM 25 **Temporal dynamics of sperm morphology in broiler breeders**
Triumph Okuku^{*1}, Florie Sambuis¹, Kolton L. Witherspoon¹, Cara Cash¹, George Hammons¹, Ky G. Pohler¹, Giri Athrey¹ ¹*Texas A&M University, College Station, Texas, United States*
- 11:30 AM 26 **Using Neural Networks to Identify Semen Parameters Impacting Broiler Breeder Fertility Outcomes**
Kolton L. Witherspoon^{*1}, Florie Sambuis¹, Cara Cash¹, Giri Athrey¹, Triumph Okuku¹ ¹*Texas A&M University, College Station, Texas, United States*

- 11:45 AM 27 **Characterizing germ cell dynamics of the post-hatch ovary across three turkey lines**
Clara J. Ziezold^{*1}, George B. Hall^{2,3}, Diane Hildenberger², Julie A Long², Kristen Diehl², Grégory Y. Bédécarrats¹ ¹*University of Guelph, Guelph, Ontario, Canada;* ²*ARS-USDA, Beltsville, Maryland, United States;* ³*ARS-USDA, Oak Ridge, Tennessee, United States*
- 12:00 PM 28 **The culturable reproductive tract microbiota of chickens**
Nir Ben Porat^{*1}, Naama Shterzer¹, Erez Mills¹ ¹*The Robert H. Smith Faculty of Agriculture, Hebrew University of Jerusalem, Rehovot, Israel*

Student Competition: Metabolism and Nutrition: Feed Additives

Moderator: Maria Terra-Long, Phileo by Lasaffre

Room 305A-305B (Abstact Session Room E)

- 10:15 AM 29 **The effects of a novel precision biotic on modulating the gene expression of tight junctions, nutrient transporters, immune responses, and ceca protein levels in *Eimeria*-challenged broiler chickens fed wheat-based diets**
Rama Devi Kolli^{*1}, Bhargavi Kasireddy¹, Cristiano Bortoluzzi², Oluyinka A. Olukosi¹ ¹*University of Georgia, Athens, Georgia, United States;* ²*dsm-firmenich, College Station, Texas, United States*
- 10:30 AM 30 **Effects of dietary supplementation with organic zinc on the growth performance and tissue zinc concentration in broiler chickens**
Hansol Kim^{*1}, Touying Ao², Jose Soto², Lauren Nolan², Michael Ford¹, Sunday Adedokun¹ ¹*University of Kentucky, Lexington, Kentucky, United States;* ²*Alltech Inc., Nicholasville, Kentucky, United States*
- 10:45 AM 31 **Effects of microencapsulated copper sulfate on the performance of 0 to 35 d old broiler chickens raised on used litter**
Jennifer A. Blair^{*1}, Joel Samuels², Winston Samuels², Mike Persia¹ ¹*Virginia Tech, Blacksburg, Virginia, United States;* ²*Maxx Performance, Roanoke, Virginia, United States*
- 11:00 AM 32 **Dietary Spirulina supplementation in low-protein diets modulates cecal short-chain fatty acids and jejunal morphology in broiler chickens**
Emmanuel Alagbe^{*1}, Olatunde Awonyemi¹, Hagen Schulze², Olayiwola Adeola¹ ¹*Purdue University, West Lafayette, Indiana, United States;* ²*Livalta, Peterborough, Lynchwood, United Kingdom*
- 11:15 AM 33 **Microalgae (*Spirulina Platensis*) improves broiler breast yield under heat stress conditions: role of protein synthesis pathway**
Brooklee Roach^{*1}, Elizabeth Greene¹, Sara Orłowski-Workman¹, Walter G. Bottje¹, Michael Kidd¹, Sami Dridi¹ ¹*University of Arkansas, Fayetteville, Arkansas, United States*
- 11:30 AM 34 **Assessment of black soldier fly larvae (BSFL) as a dietary supplement to mitigate necrotic enteritis and improve gut health in broiler chickens**
Ishwari Gyawali^{*1}, Hanseo Ko¹, Doyun Goo¹, Hemanth R. Katha¹, Deependra Paneru¹, Jayant Lohakare², Jeffery Tomberlin⁴, Shaun Francis³, Woo K. Kim¹ ¹*University of Georgia, Athens, Georgia, United States;* ²*Prairie View A&M University, Prairie View, TX, Prairie View, Texas, United States;* ³*University of Arkansas at Pine Bluff, Pine Bluff, Arkansas, United States;* ⁴*Texas A&M University, Texas, Texas, United States*

- 11:45 AM 35 **Optimizing Broiler Performance through Nutritionally Enhanced Diets and Multi-Enzyme Supplementation**
Muhammad Afaq Khan Sunbul^{*1}, Yousaf Muhammad¹, Arslan Muhammad² ¹*University of Agriculture, Faisalabad, Daira Din Panah, Punjab, Pakistan*; ²*Cholistan University of Veterinary & Animal Sciences - CUVAS Bahawalpur, Bahawalpur, Punjab, Pakistan*

Student Competition: Metabolism and Nutrition: Enzymes

Moderator: Xavière Rousseau, AB Vista

Room 301A-301B (Abstact Session Room A)

- 11:15 AM 36 **Supplementing corn-soybean meal diet with admixture of xylanase and glucanase increased the weight gain of broiler chickens during compensatory growth phase following an *Eimeria* challenge**
Olanrewaju Ayinde^{*1}, Mohammad Pilevar¹, Adebayo Sokale², Guilherme Pasquali³, Oluyinka A. Olukosi¹ ¹*University of Georgia, Athens, Georgia, United States*; ²*BASF Corporation, Florham Park, New Jersey, United States*; ³*BASF SE, Ludwigshafen am Rhein, Germany*
- 11:30 AM 37 **Effects of cyclic heat stress and phosphorous and calcium reduction with phytase supplementation on growth performance and bone ash in 28-d-old broilers**
Elizabeth Meza Robinson^{*1}, Hansol Kim¹, Jacqueline Jacob¹, Michael Ford¹, Sunday Adedokun¹ ¹*University of Kentucky, Lexington, Kentucky, United States*
- 11:45 AM 38 **Impact of protease supplementation on performance and pancreas weight in broilers fed diets containing soybean meal with different levels of trypsin inhibitor activity**
Tony Ferreira^{*13}, Christine Jansen Van Resnburg¹, Roselina Angel², Peter plumstead³, Kyle Venter³ ¹*University of Pretoria, Johannesburg, South Africa*; ²*University of Maryland, College Park, Maryland, United States*; ³*Neuro Livestock Research, Brits, South Africa*
- 12:00 PM 39 **Enzyme addition improves performance and the caecal microbial community of broilers fed high rye diet**
Danish Rauf^{*1}, Mike Bedford², Ashraf Alkhtib¹, Dawn Scholey¹, Emily Burton¹ ¹*Nottingham Trent University, Nottingham, United Kingdom*; ²*AB Vista, Marlborough, United Kingdom*

Informal Nutrition Symposium: Dynamic feed formulation in commercial poultry nutrition

Chair: Douglas R. Korver, University of Alberta

Ballroom B

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| 1:15 PM | 531S | Dynamic feed formulation in commercial poultry nutrition
Roselina Angel* ⁵ , Todd J. Applegate ³ , Milan Hruby ⁶ , Roshan Adhikari ⁴ , Doug Korver ^{1,2} ¹ <i>Alpine Poultry Nutrition, Inc., Edmonton, Alberta, Canada;</i> ² <i>University of Alberta, Edmonton, Alberta, Canada;</i> ³ <i>University of Georgia, Athens, Georgia, United States;</i> ⁴ <i>CJ Bio America Inc, Downers Grove, Illinois, United States;</i> ⁵ <i>University of Maryland, College Park, Maryland, United States;</i> ⁶ <i>Archer Daniels Midland Co, Decatur, Illinois, United States</i> |
| 1:25 PM | 532S | Key Issues to Address to Successfully Implement Dynamic Feed Formulation
Mike Blair* ¹ ¹ <i>Devenish NA, Fairmont, Minnesota, United States</i> |
| 1:55 PM | 533S | Opportunities and challenges for expanding NIR use in dynamic feed formulation
Henk Enting* ¹ , Hsuan Chen ¹ , Lieske v. Eck ¹ , Evelien v. Hoeven ¹
¹ <i>Cargill Animal Nutrition and Health, Velddriel, Netherlands</i> |
| 2:25 PM | 534S | Dynamic formulation for amino acid and energy
Antônio M. Penz Junior* ¹ , Daniel Bruno ² ¹ <i>Cargill Animal Nutrition, Rio Grande do Sul, Porto Alegre, Brazil;</i> ² <i>Cargill Animal Health, Campinas, Sao Paulo, Brazil</i> |
| 3:00 PM | | Life Mentor Awards
Todd J. Applegate, <i>University of Georgia</i> |
| 3:15 PM | | Break |
| 4:00 PM | 535S | Beyond LCF - formulating for broiler performance, yield, and profitability
J. T. Pope* ¹ ¹ <i>House of Raeford, Mebane, North Carolina, United States</i> |
| 4:30 PM | 536S | Putting the pieces together: the use of production datasets for predictive modeling within an integrated system
Jake S. Pieniazek* ¹ ¹ <i>Holmes Foods, Inc., Seguin, Texas, United States</i> |
| 5:10 PM | | Questions and panel discussion |

Symposium: The many facets of glucocorticoid actions from stress and beyond

Chairs: Gregory S. Fraley, Purdue University
Grégory Bédécarrats, University of Guelph

Ballroom C

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|---------|------|---|
| 1:15 PM | | Introduction
Grégory Bédécarrats, <i>University of Guelph</i> |
| 1:20 PM | 537S | Historical and present understanding of glucocorticoid research in poultry: A case for reevaluation of the entire avian hypothalamo-pituitary adrenal axis
Colin Scanes* ¹ , Krystyna Pierzchala-Koziec ² ¹ <i>University of Wisconsin Milwaukee, Urbandale, Iowa, United States;</i> ² <i>University of Agriculture, Krakow, Poland</i> |
| 2:00 PM | 538S | What wild bird studies can tell us about how to interpret corticosterone responses in poultry.
L. Michael Romero* ¹ ¹ <i>Tufts University, Medford, Massachusetts, United States</i> |
| 2:45 PM | 539S | Glucocorticoids are not just about stress: from metabolism to epigenetics and the rheostatic control of baseline.
Gregory S. Fraley* ¹ ¹ <i>Purdue University, West Lafayette, Indiana, United States</i> |
| 3:15 PM | | Break |
| 4:00 PM | 540S | Developmental and metabolic impacts of glucocorticoids in poultry
Laura E. Ellestad* ¹ , Tom Porter ² , Colin A. Barcelo ¹ , Grant G. Bennett ¹ , Lauren Vaccaro ¹ , R. Alejandra Garcia-Mejia ¹ ¹ <i>University of Georgia, Athens, Georgia, United States;</i> ² <i>University of Maryland, College Park, Maryland, United States</i> |
| 4:35 PM | 541S | Physiological responses of wild birds to climate change- and urbanization-related temperature variation
Pierre Deviche* ¹ ¹ <i>Arizona State University, Tempe, Arizona, United States</i> |
| 5:20 PM | | Questions and answers |

Student Competition: Microbiology and Food and Safety I

Moderator: Dana Dittoe, University of Wyoming

Room 301A-301B (Abstact Session Room A)

- 1:15 PM 40 **Modeling of the thermal inactivation of *Salmonella* Surrogate, *Enterococcus faecium*, in mash broiler feed pelleted in a university pilot feed mill**
Corey Coe^{*1}, Timothy Boltz², Joe Moritz¹, Carly G. Long³, Cangliang Shen¹ ¹West Virginia University, Morgantown, West Virginia, United States; ²Mississippi State University, Starkville, Mississippi, United States; ³West Virginia University, Morgantown, West Virginia, United States
- 1:30 PM 41 **Evaluation of O3 gas as a potential antimicrobial fumigant for commercial poultry feed trucks**
Kristen Martin^{*1}, Lauren M. Lavery¹, Juan D. Latorre¹, Chip Garritty², Rafael Correa³, Danielle Graham¹, Billy M. Hargis¹ ¹University of Arkansas, Fayetteville, Arkansas, United States; ²Senior Veterinarian II, Siloam Springs, Arkansas, United States; ³Innovative Consulting, Berlin, Maryland, United States
- 1:45 PM 42 **Effect of electron beam irradiation on the immunosuppressive properties of deoxynivalenol in HD11 chicken macrophage cells following lipopolysaccharide challenge**
Laharika Kappari^{*1}, Palmy Jesudhasan², Ramesh Selvaraj³, Todd J. Applegate⁴, Revathi Shanmugasundaram⁵ ¹University of Georgia, Athens, Georgia, United States; ²USDA-ARS, Fayetteville, Arkansas, United States; ³University of Georgia, Athens, Georgia, United States; ⁴University of Georgi, Athens, Georgia, United States; ⁵USDA, ARS, Athens, Georgia, United States
- 2:00 PM 43 **Sweet cherry (*Prunus avium*) pomace extract on cell defences against *Salmonella enterica* serovar Enteritidis**
Nada Ahmed^{*1,2}, Mohamed El-Fateh¹, Xianhua Yin², Kelly Ross³, Moussa S. Diarra², Xin Zhao¹ ¹Mcgill University, Sainte Anne De Bellevue, Quebec, Canada; ²Agriculture and Agri-Food Canada, Guelph, Ontario, Canada; ³Agriculture and Agri-Food Canada, Summerland, British Columbia, Canada
- 2:15 PM 44 **Efficacy of Oral and Intracloacal Administration of Probiotic Lactobacilli and their Postbiotics in Modulating the Gut Microbiome and Mitigating *Campylobacter* Colonization in Chickens**
Shreeya Sharma^{*1}, Hosni Hassan², Khaled Abdelaziz¹ ¹Clemson University, Clemson, South Carolina, United States; ²North Carolina State University, Raleigh, North Carolina, United States
- 2:30 PM 45 **Modulating the poultry gut resistome: anti-horizontal gene transfer potential of in-feed cuminaldehyde supplementation**
Rithu Chandran^{*1}, Lekshmi Edison¹, Roshen Neelawala¹, Varsha Bommineni¹, Thomas Denagamage², Subhashinie Kariyawasam¹, Kumar Venkitanarayanan³, Abraham Joseph Pellissery¹ ¹University of Florida, Gainesville, Florida, United States; ²University of Florida, Gainesville, Florida, United States; ³University of Connecticut, Storrs, Florida, United States

- 2:45 PM 46 **Impact of litter treatment and organic acid supplementation via drinking water on *Salmonella* prevalence and growth performance in *Salmonella*-challenged broilers**
Eva G. Guzman Guzman^{*1}, Jose I. Vargas², Joseph P. Gulizia³, Jose R. Hernandez⁴, Jibely Martinez⁵, Maria Brizuela¹, Fanny Abigail Contreras Zelaya¹, Karla Valeria Casco Gomez¹, Ansel Steele¹, Matthew A. Bailey¹, Ruediger Hauck²⁶, Dianna Bourassa⁷, Ken Macklin⁸, Wilmer J. Pacheco⁹ ¹Auburn University, Auburn, Alabama, United States; ²Auburn University, Auburn, Alabama, United States; ³Auburn University, Auburn, Alabama, United States; ⁴Auburn University, Auburn, Alabama, United States; ⁵Panamerican Agricultural School, Valle de Yeguaré, Honduras; ⁶Auburn University, Auburn, Alabama, United States; ⁷Auburn University, Auburn, Alabama, United States; ⁸Mississippi State University, Starkville, Mississippi, United States; ⁹Auburn University, Auburn, Alabama, United States
- 3:00 PM 47 **In-feed therapeutic supplementation of linalool reduces *Salmonella* Enteritidis and *Campylobacter jejuni* colonization in market-age broiler chickens**
Leya Susan Viju^{*1}, Divya Joseph¹, Kumar Venkitanarayanan¹
¹University of Connecticut, Willington, Connecticut, United States
- 3:15 PM **Break**
- 4:00 PM 48 **In-Water Supplementation of Trans-Cinnamaldehyde Nanoemulsion Reduces *Salmonella* Enteritidis Colonization in Ceca and Oviduct of Layer Chickens.**
Trushenkumar M. Shah^{*1}, Chetna Shah¹, Balaji Belore¹, Ana Leticia De Almeida¹, Jodie T. Allen¹, Indu Upadhyaya², Abhinav Upadhyay¹ ¹University of Connecticut, Storrs, Connecticut, United States; ²University of Connecticut, Tolland, Connecticut, United States
- 4:15 PM 49 **Optimizing eBeam strategies against *Campylobacter* colonization in broiler chickens**
Tanmaie Kalapala^{*1}, Anna Facchetti V Assumpcao¹, Annie Donoghue², Tomi Obe¹, Palmy Jesudhasan³, Komala Arsi² ¹University of Arkansas, Fayetteville, Arkansas, United States; ²Poultry Production and Product Safety Research, Fayetteville, Arkansas, United States; ³USDA-ARS, Fayetteville, Arkansas, United States
- 4:30 PM 50 **Alterations to the phenotypic expression of *Salmonella enterica* due to environmental stressors**
Prantho Malakar Dipta^{*1}, Seth O. Adesope¹, Eniola Betiku¹, Tomi Obe¹² ¹University of Arkansas, Fayetteville, Arkansas, United States; ²Center for Food Safety, University of Arkansas, Fayetteville, Arkansas, United States
- 4:45 PM 51 **Impact of *Salmonella* Infantis Inoculation on Poultry Litter Microbiome**
Rabin Raut^{*1}, Farazi Rahman¹, Dianna Bourassa¹, Sabin Poudel² ¹Auburn University, Auburn, Alabama, United States; ²Auburn University, Auburn, Alabama, United States
- 5:00 PM 52 **Impact of Storage Temperature on Microbial Composition in Poultry Litter Over Time**
Max Peckenshneider^{*1}, Elena G. Olson¹, Brett Hale², Carson Priddle², Steven C. Ricke¹ ¹University of Wisconsin, Madison, Wisconsin, United States; ²AgriGro, Doniphan, Missouri, United States
- 5:15 PM 53 **Assessing Transcriptomic Responses of *Salmonella Infantis* in Litter**
Ruby Paudel^{*1}, Dianna Bourassa¹, Sabin Poudel¹ ¹Auburn University, Auburn, Alabama, United States

Student Competition: Extension and Instruction

Moderator: Tannah Christensen, Mississippi State University

Room 302A-302B (Abstact Session Room B)

- 1:15 PM 54 **Enhancing the Free-choice learning experience at CBATs through Interactive Poultry Programs**
Sierra B. Garrett*¹, Darrin M. Karcher² ¹*Purdue University, West Lafayette, Indiana, United States;* ²*Purdue University, West Lafayette, Indiana, United States*
- 1:30 PM 55 **Assessing the development, implementation, and evaluation of an online poultry dual credit course for high school students across the state of Mississippi**
Peyton A. Taylor*¹, Cory E. Bailey¹, Ryan M. Walker¹, Kelley G. Wamsley¹, Jessica B. Wells¹ ¹*Mississippi State University, Mississippi State, Mississippi, United States*
- 1:45 PM 56 **Development of interactive training modules for handling, herding, loading, and transporting of market-ready turkeys during live haul**
L. Anyela Hernandez*², Victoria R. Merenda³, Monique D. Pairis-Garcia³, Maria Coady⁴, Jesse L. Grimes¹, Allison Pullin¹ ¹*North Carolina State University, Raleigh, North Carolina, United States;* ²*North Carolina State University, Raleigh, North Carolina, United States;* ³*North Carolina State University, Raleigh, North Carolina, United States;* ⁴*North Carolina State University, Raleigh, North Carolina, United States*

Student Competition: Immunology, Health and Disease: Health and Disease II

Moderator: Jossie Santamaria, University of Arkansas

Room 302C (Abstact Session Room C)

- 1:15 PM 57 **Cold stress in cage-free laying hens: effect on performance, mucosal Immunity, blood biomarkers and *Salmonella* susceptibility**
Shuja Majeed*¹, Bikash Aryal¹, Bikas R. Shah¹, Nimra Khalid¹, Lisa R. Bielke⁴, Qihong Wang¹, Lingying Zhao², Ali Nazmi¹³ ¹*Ohio State University, Wooster, Ohio, United States;* ²*Ohio State University, Wooster, Ohio, United States;* ³*Ohio State University, Wooster, Ohio, United States;* ⁴*North Carolina State University, Wooster, North Carolina, United States*
- 1:30 PM 58 **Impact of different doses of Intratracheal *Escherichia coli* Challenge on Growth Performance, Immune organs, and Lesion Severity in Broilers**
Venkata Prathap Reddy Keshavareddy*¹, Hemanth Reddy Katha¹, Hanseo Ko¹, Venkata Sesha Reddy Choppa², Indira Neupane¹, Hamid Reza Rafieian-Naeini¹, Woo K. Kim¹ ¹*University of Georgia, Athens, Georgia, United States;* ²*University of Georgia, Athens, Georgia, United States*

- 1:45 PM 59 **The impacts of multi-species *Eimeria* vaccination on cecal microbiota diversity and composition of turkey poults**
Philip Yeboah*¹, Demilade I. Ibiwoye², Thaciane L. Amaral¹, Natalie Roberts¹, Lauren Anderson², Muhammad Wajeeh Ul Hassan³, Lisa R. Bielke¹ ¹*North Carolina State University, Raleigh, North Carolina, United States*; ²*North Carolina State University, Raleigh, North Carolina, United States*; ³*North Carolina State University, Raleigh, North Carolina, United States*
- 2:00 PM 60 **Evaluation of probiotic interventions against turkey reoviral arthritis in specific pathogen free (SPF) turkeys**
Saroj Khatiwada*¹, Thamonpan Laocharoensuk¹², Patricia A. Boley¹, Carolyn M. Lee¹², Kush K. Yadav¹²³, Bikash Aryal¹, Alok Dhakal¹, Khadijat Adefaye¹, Menuka Bhandari¹³, Anusree Thenissery¹, Tim Johnson⁴, Gireesh Rajashekara¹²⁵, Scott Kenney¹² ¹*Ohio State University, Wooster, Ohio, United States*; ²*Ohio State University, Columbus, Ohio, United States*; ³*Virginia Polytechnic Institute and State University, Blacksburg, Virginia, United States*; ⁴*University of Minnesota, St. Paul, Minnesota, United States*; ⁵*University of Illinois, Urbana, Illinois, United States*
- 2:15 PM 61 **Assessing the impact of phage therapy on growth performance, microbiome, and phage specific immune response in chickens**
Iqra nazir*¹, Devender Arora², Muktesh Chandra², Jyothi Thimmapuram², Paul Ebner¹ ¹*Purdue University, West Lafayette, Indiana, United States*; ²*Purdue University, West Lafayette, Indiana, United States*
- 2:30 PM 62 **Characterization of LysM protein in *Histomonas meleagridis*, a protozoan pathogen in turkeys**
Ariana Bachini*¹, Alessandro J. Rocchi¹, Danielle Graham², Billy M. Hargis², Zhicheng Dou¹ ¹*Clemson University, Bentonville, Arkansas, United States*; ²*University of Arkansas, Fayetteville, Arkansas, United States*
- 2:45 PM 63 **Gene Expression of Immune Mediators in the Ceca, Ceca Tonsil, and Spleen Tissues of Poults Post Infection with *Eimeria***
Demilade I. Ibiwoye*¹, Philip Yeboah¹, Thaciane L. Amaral¹, Shelly Nolin¹, Lisa R. Bielke¹ ¹*North Carolina State University, Raleigh, North Carolina, United States*

Student Competition: Genetics and Molecular Biology

Moderator: Sara Cloft, Purdue University

Room 303 (Abstact Session Room D)

- 1:15 PM 64 **Comparative proteomics of *Salmonella* Enteritidis reveal the differing adaptative mechanisms between egg contamination and cell invasion**
Veera Venkata Praveen Raja Kosuri*¹, Chen Zhu¹, Arya Niraula¹, Chaoyu Zhai¹, Mary Anne Amalaradjou¹ ¹*University of Connecticut, Storrs, Connecticut, United States*
- 1:30 PM 65 **Development of a CFU-calibrated qPCR Assay for Detection of a Conserved Pathogenicity Factor in *Enterococcus cecorum***
Thaciane L. Amaral*¹, Latasha Gray², Philip Yeboah¹, Demilade I. Ibiwoye¹, Justin H. Lowery¹, Caleb M. Marshall¹, Taylor K. O'Leary¹, Shelly Nolin¹, James Higueta², Danielle Graham², Renata Gomes³, Lisa R. Bielke¹ ¹*North Carolina State University, Raleigh, North Carolina, United States*; ²*University of Arkansas, Fayetteville, Arkansas, United States*; ³*Universidade Federal de Goiás, Goiânia, GO, Brazil*

- 1:45 PM 66 **Transcriptomic analysis reveals myogenic effects of *Lactobacillus paracasei* and *Lactobacillus rhamnosus* on broiler embryo muscle development**
Yuying Ren^{*1}, Mary Anne Amalaradjou² ¹*University of Connecticut, Storrs, Connecticut, United States;* ²*University of Connecticut, Storrs, Connecticut, United States*
- 2:00 PM 67 **A landscape genomics approach to detect adaptive loci in local chicken breeds**
Carl Kroger^{*1,2}, Romuald Rouger², Michel Sourdoux², Michele Trixie-Boichard¹, Tatiana Zerjal¹, Gwendal Restoux¹ ¹*INRAE, Jouy-en-Josas, France;* ²*SYSSAF, French Poultry and Aquaculture Breeders Association, Nouzilly, France*
- 2:15 PM 68 **Epigenetic Programming of the Broiler Hypothalamus by In-Ovo Green Monochromatic Illumination: Effects on Growth and Metabolism**
Joanna Bartman^{*1}, Tali Rosenberg¹, Hadar Parnas¹, Natalie Avital Cohen¹, Ron Weiss¹, Gal Harmatz¹, Israel Rozenboim¹, Asaf Marco¹ ¹*The Hebrew University of Jerusalem, Rehovot, Israel*
- 2:30 PM 69 **Alternative pathway for vitamin B₁₂ absorption in chickens possessing mutated tumor virus A receptors**
YunJi Shin^{*1}, Jin-Kyoo Kim^{2,1}, Seung Je Woo³, Byung Chul Park², Jae Yong Han^{1,2} ¹*Seoul National University, Seoul, Korea (the Republic of);* ²*Seoul National University, Seoul, Korea (the Republic of);* ³*Seoul National University, Seoul, Korea (the Republic of)*
- 2:45 PM 70 **Exploring the transcriptomic regulation of muscle development in Chickens**
Jaerung So^{*1}, Andrew Bugenyi³, Ki-Duk Song² ¹*Chonbuk-national University, Jeonju-si, Korea (the Republic of);* ²*International Agricultural Development and Cooperation Center, Jeonju, Korea (the Republic of);* ³*National Agricultural Research Organization, Mbarara, Uganda*

Extension and Instruction

Moderator: Tannah Christensen, Mississippi State University

Room 302A-302B (Abstact Session Room B)

- 2:15 PM 71 **Supporting the poultry industry with Extension, instruction, and applied research**
John W. Boney^{*1} ¹*Penn State University, University Park, Pennsylvania, United States*
- 2:45 PM 72 **Science-based instruction and student demographics influenced undergraduate student opinions of the poultry industry in an introductory poultry science course**
Kayla Elmore^{*1}, Elizabeth Bobeck¹ ¹*Iowa State University, Ames, Iowa, United States*
- 3:00 PM 73 **Echoes of Experience: The role of previous poultry experience in student interest in the poultry industry**
Sara Cloft^{*1}, Brianna Wardwell¹, Dea Bogdanic¹, Elizabeth Karcher¹ ¹*Purdue University, West Lafayette, Indiana, United States*
- 3:15 PM **Break**
- 4:00 PM 74 **The Impact of a Poultry-Focused CURE on Scientific Self-Efficacy and Persistence in STEM**
Dea Bogdanic^{*1}, Elizabeth Karcher² ¹*Purdue University, Lafayette, Indiana, United States;* ²*Purdue University, West Lafayette, Indiana, United States*

- 4:15 PM 75 **Effective vaccination in coccidiosis control**
Kaveh Parvandar Asadollahi*¹ ¹*Islamic Azad University, Tehran, Tehran, Iran (the Islamic Republic of)*
- 4:30 PM 76 **Machine-Learning Enabled Real-Time Ammonia Monitoring in Poultry House**
Xiaojuan (Judy) Song*¹, Nathan Damen¹, Zhaonan(Zeke) Liu², Yifeng Wang¹, Austen R. Monteith³, Christopher A. Heist¹, Jianjun Shi¹, Chuck Zhang¹, Doug Britton¹, Brian Fairchild⁴ ¹*Georgia Tech Research Institute, Atlanta, Georgia, United States*; ²*Georgia Institute of Technology, Atlanta, Georgia, United States*; ³*Georgia Tech Research Institute, Atlanta, Georgia, United States*; ⁴*University of Georgia, Athens, Georgia, United States*
- 4:45 PM 77 **Field Report: Study on practices for utilizing nitrogen foam euthanasia in Pennsylvania swine and poultry operations**
Gregory P. Martin*¹, Elizabeth Hines², J. Craig Williams¹, Dan Hougentogler³, A. Hamberg⁴, M. Kalley⁴ ¹*Penn State University, Lancaster, Pennsylvania, United States*; ²*Pennsylvania State University, State College, Pennsylvania, United States*; ³*Agricultural Emergency Services Inc., State College, Pennsylvania, United States*; ⁴*Pennsylvania Dept of Agriculture, Harrisburg, Pennsylvania, United States*
- 5:00 PM 78 **Problems and Prospects of precision feeding among broiler farmers in Ibadan metropolis of Oyo state, Nigeria**
Johnson A. Olupona*¹ ¹*Federal College of Animal Health and Production Technology Ibadan, Ibadan, Oyo, Nigeria*

Tuesday, July 15

SYMPOSIA AND ORAL SESSIONS

Symposium: The feed milling process: A focus on pelleting, liquid application, and their effects on animal production

Chairs: Ariel N. Bergeron, Adisseo USA
Robert B. Shirley, Adisseo USA

Ballroom B

8:00 AM		Introduction Ariel N. Bergeron, <i>Adisseo USA</i> & Robert B. Shirley, <i>Adisseo USA</i>
8:05 AM	542S	History of the American Feed Industry Charles R. Stark* ¹ <i>¹Country View Valley Farms, Mechanicsburg, Pennsylvania, United States</i>
8:40 AM	543S	Perspectives on pelleting: What is too little and too much in regard to nutrition? John W. Boney* ¹ <i>¹Penn State University, University Park, Pennsylvania, United States</i>
9:20 AM	544S	Liquid application in today's feed mill environment and importance Todd Goldsmith* ¹ <i>¹Liquid Systems, Inc., Simpsonville, South Carolina, United States</i>
10:00 AM		Break
10:45 AM	545S	Pellet quality from a production perspective: What is measured and why is it important J. T. Pope* ¹ <i>¹House of Raeford, Mebane, North Carolina, United States</i>
11:20 AM	546S	Feed Milling Dynamics: What should we monitor and what can we improve? Shawn Bradshaw* ¹ <i>¹Adisseo, Four Oaks, North Carolina, United States</i>
11:55 AM		Roundtable discussion

Symposium: Current perspectives on the control of Avian Influenza in the poultry industry

Chairs: Yewande Fasina, North Carolina A&T State University
Douglas R. Korver, University of Alberta

Ballroom C

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| 8:00 AM | 547S | Environmental Dynamics and Transmission of High Pathogenicity Avian Influenza in Poultry Production
Erica Spackman* ¹ ¹ <i>USDA-ARS, Athens, Georgia, United States</i> |
| 8:30 AM | 548S | Transmissibility of avian influenza from dairy cattle to poultry
Carolyn M. Lee ¹ , Bryant Foreman ¹ , Hannah Cochran ¹ , Patricia A. Boley ¹ , Jennifer Schrock ¹ , Natalie Tarbuck ¹ , Olaitan Shekoni ¹ , Raksha Suresh ¹ , Sara Dolatyabi ¹ , Christina Sanders ¹ , Elizabeth Ohl ¹ , Alok Dhakal ¹ , Erika Stevens ¹ , Mohammad Jahid ¹ , Kait Starr ¹ , Yehia Saif ¹ , Juliette Hanson ¹ , Renukaradhya Gourapura ¹ , Cody Warren ¹ , Andrew Bowman ¹ , Scott Kenney* ¹ ¹ <i>Ohio State University, Wooster, Ohio, United States</i> |
| 9:00 AM | 549S | A One Health Approach to Avian influenza: Interrelationships between Poultry, Dairy, and Humans
Meghan Davis* ¹ ¹ <i>Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland, United States</i> |
| 9:30 AM | 550S | Vaccination strategies and surveillance of high pathogenicity avian influenza in poultry
David Swayne* ^{1,2} ¹ <i>Birdflu Veterinarian LLC, Watkinsville, Georgia, United States</i> ; ² <i>University of Georgia, Athens, Georgia, United States</i> |
| 10:00 AM | | Break |
| 10:45 AM | 551S | Controlling Avian Influenza in turkey flocks
Katie Stumvoll* ¹ ¹ <i>StumVet Consulting LLC, Alexandria, Minnesota, United States</i> |
| 11:15 AM | 552S | Future Research on Highly Pathogenic Avian Influenza (HPAI) for the Development of Superior Control Strategies for Poultry Production
Guillermo Tellez-Isaias* ¹ ¹ <i>Eco-Bio LLC, Fayetteville, Arkansas, United States</i> |
| 11:45 AM | | Roundtable discussion |

Student Competition: Microbiology and Food and Safety II

Moderator: Sabin Poudel, Auburn University

Room 301A-301B (Abstact Session Room A)

- 8:00 AM 79 **Examining the cecal microbiota of conventional and slow growing broilers in floor pen and silvopasture rearing systems**
Justin H. Lowery^{*1}, Monika Proszkowiec-Weglarz², Yabaiz Tahir¹, Athena He-DeMontaron¹, Jean C. Concepcion¹, Jesse L. Grimes¹, Yan L. Campbell¹, Allison Pullin¹, Lin Walker¹ ¹North Carolina State University, Raleigh, North Carolina, United States; ²USDA, ARS, Beltsville, Maryland, United States
- 8:15 AM 80 ***Campylobacter hepaticus* Used as an Indicator Organism to Evaluate Biosecurity at a Commercial Egg Farm**
Lindsey A. Wythe^{*1}, Yuhua Z. Farnell², Morgan Farnell¹ ¹Texas A&M University, College Station, Texas, United States; ²Texas A&M University, College Station, Texas, United States
- 8:30 AM 81 **Unraveling aerotolerance of *Campylobacter jejuni* and *Campylobacter coli*: A transcriptomic approach**
Elise A. Delaporte^{*1}, Anand Karki², Mohamed K. Fakhr¹ ¹University of Tulsa, Tulsa, Oklahoma, United States; ²Sam Houston State University, Huntsville, Texas, United States
- 8:45 AM 82 **Microbial mapping of pathogen load and indicators in a small pastured-poultry processing plant**
Eniola Betiku^{*1}, Kim Schroeder¹, Tomi Obe¹² ¹University of Arkansas, Fayetteville, Arkansas, United States; ²University of Arkansas, Fayetteville, Arkansas, United States
- 9:00 AM 83 **Assess West Virginia very small poultry producers' knowledge of applying mobile poultry processing unit and Evaluate Vinegar Water Against *Salmonella* Typhimurium, *Campylobacter jejuni*, and surrogate bacteria *Enterococcus faecium* during Chilling of Chicken Carcasses**
Carly G. Long^{*1}, Corey Coe¹, Timothy Boltz², Cangliang Shen¹ ¹West Virginia University, Morgantown, West Virginia, United States; ²Mississippi State University, Mississippi State, Mississippi, United States
- 9:15 AM 84 **Evaluating free chlorine decay kinetics, efficacy in pathogen reduction, and interactions with organic matter during poultry processing**
Vyshnavi Ciluveru^{*1}, Shawn D Ryan², Chandra Kothapalli¹, Daniel S Munther² ²Cleveland State University, Cleveland, Ohio, United States; ²Cleveland State University, Cleveland, Ohio, United States
- 9:30 AM 85 **Identifying chemical methods to optimize the lifetime of peracetic acid**
Kortney Martin^{*1}, Austen R. Monteith¹, Jordan Ash¹, Daniel Sabo¹ ¹Georgia Tech Research Institute, Atlanta, Georgia, United States
- 9:45 AM 86 **Differences in susceptibility of peracetic acid (PAA) across multiple *Salmonella* serovars**
Marco Reina^{*1}, Aaron Bodie² ¹University of Georgia, Athens, Georgia, United States; ²University of Georgia, Athens, Georgia, United States
- 10:00 AM **Break**
- 10:45 AM 87 **Pre-Harvest Heat Stress and Its Effect on the Post-Harvest Shelf-Life of Chicken Carcasses**
Mack P. Myer^{*1}, Elizabeth Greene², Sami Dridi², Molly R. Sackmann¹, Cody L. Gifford¹, Dana K. Dittoe¹ ¹University of Wyoming, Laramie, Wyoming, United States; ²University of Arkansas, Fayetteville, Arkansas, United States

- 11:00 AM 88 **Evaluate the efficacy of commercial marinades with/without microwave heating against *Salmonella* Typhimurium on chicken breasts**
Gary Freshour^{*1}, Corey Coe¹, Carly G. Long¹, Cangliang Shen¹ ¹West Virginia University, Morgantown, West Virginia, United States
- 11:15 AM 89 **Evaluating the efficacy of photonic decontamination treatment on *Salmonella* reduction on packaged poultry parts**
Abigail McConnell^{*1}, Madalyn Jennings¹, Matthew Hughes¹, Jewel Krings¹, R. Jeff Buhr², Dianna Bourassa¹ ¹Auburn University, Auburn, Alabama, United States; ²USDA-ARS, Athens, Georgia, United States
- 11:30 AM 90 **Biofilm formation and antimicrobial resistance profile of *Salmonella* Newport isolated from rubber plucking fingers**
João Vitor D. Costa^{*1}, Evelin L. Sano¹, Larissa Justino¹, Maria F. Pilli¹, Ana Carolina B. Benteo¹, Jurandir D. Junior¹, Kacio Emilio B. Baierle¹, Ana Angelita S. Baptista¹ ¹State University of Londrina, Londrina, PR, Brazil

Student Competition: Metabolism and Nutrition: General Nutrition II

Moderator: Dima White, Global Animal Health

Room 302A-302B (Abstact Session Room B)

- 8:00 AM 91 **Influence of the origin of the soybean meal on the metabolizable energy content and ileal digestibility of crude protein in broilers**
Guillermo Talegón^{*1}, Lewis Aguirre², Lourdes Cámara¹, Rosa Lázaro¹, Ana Isabel García-Ruiz², Gonzalo González Mateos¹ ¹UPM, Madrid, Spain; ²Trouw Nutrition R&D Poultry Research Centre, Casarrubios del Monte, Spain
- 8:15 AM 92 **Impact of increasing dietary nutrient density with high levels of canola product in broiler diets**
Milan Kandel^{*1,2}, Shemil Macelline^{1,2}, Robin Melwani^{1,2}, Mehdi Toghyani^{1,2}, Ruth N. Zadoks^{3,2}, Peter H. Selle^{3,2}, Sonia Liu^{1,2} ¹University of Sydney, Brownlow Hill, New South Wales, Australia; ²Poultry Research Foundation, University of Sydney, Camden, New South Wales, Australia; ³University of Sydney, Camperdown, New South Wales, Australia
- 8:30 AM 93 **Early Post-Hatch Delayed Feeding Stress Alters Gastrointestinal Development, Enteroendocrine Hormone Expression, and Long-Term Gut Function in Broiler Chickens**
Abdallah Hadimundeen^{*1}, Peter Mann¹, Liang-en Yu¹, Yihang Li¹ ¹University of Delaware, Elkton, Maryland, United States
- 8:45 AM 94 **Synergistic effects of soluble and insoluble fiber combinations on the jejunal and cecal microbiota of broilers with a subclinical enteric challenge**
Rana Waqar Tabish^{*1}, Yang Lin¹, Samuel Rochell¹, Wilmer J. Pacheco¹, Matthew A. Bailey¹, William A. Dozier¹, Clint W. McCafferty², Ruediger Hauck^{1,3} ¹Auburn University, Auburn, Alabama, United States; ²USDA-ARS Poultry Research Unit, Starkville, Mississippi, United States; ³Auburn University, Auburn, Alabama, United States
- 9:00 AM 95 **Interactions of deoxynivalenol, *Eimeria* challenge, and cyclic heat stress on productivity, egg quality, body composition, and gut health in laying hens**
Deependra Paneru^{*1}, Hanseo Ko¹, Doyun Goo¹, Ishwari Gyawali¹, Hemanth R. Katha¹, Indira Neupane¹, Woo K. Kim¹ ¹University of Georgia, Athens, Georgia, United States

9:15 AM	96	Chemical composition, amino acid profile, and protein quality indicators of soybean meals from different origins collected from 2006 to 2024 Nereida Luna Corrales* ¹ , Lourdes Cámara ¹ , Nada Souid ¹ , Mateo Lucio ¹ , Gonzalo González Mateos ¹ ¹ UPM, Madrid, Madrid, Spain
9:30 AM	97	Production Performance and Nitrogen Balance in Laying Hens in Response to Dietary Protein Levels Jeseok Lee* ¹ , Elijah Ogola Oketch ¹ , Shan R. Nawarathne ¹ , Dong Jun Lee ² , Jung Min Heo ¹ ¹ Chungnam National University, Daejeon, Korea (the Republic of); ² National Institute of Animal Science, Rural Development Administration (RDA), Wanju-Gun, Korea (the Republic of)
9:45 AM	98	Exploring laying hen responses to graded levels of dietary crude protein reduction Elijah Ogola Oketch* ¹ , Myunghwan Yu ¹ , Shan R. Nawarathne ¹ , Nuwan Chamara Chaturanga ¹ , Jeseok Lee ¹ , Haeun Park ¹ , Jung Min Heo ¹ ¹ Chungnam National University, Daejeon, Korea (the Republic of)
10:00 AM		Break
10:45 AM	99	<i>In ovo</i> supplementation of branched-chain amino acids and hepatic mitochondrial function in developing chicken embryos Caitlin Ryan* ¹ , Courtney Carlson ³ , Parama Bhattacharjee ² , Nishanth E. Sunny ¹ ¹ University of Maryland, College Park, Maryland, United States; ² University of Maryland, College Park, Hyattsville, Maryland, United States; ³ University of Maryland, College Park, Maryland, United States
11:00 AM	100	The effect of low-protein soybean meal with graded inclusion levels of soyhull on immune parameters, jejunal tissue histomorphology in broiler chickens challenged with mixed <i>Eimeria</i> spp. Bhargavi Kasireddy* ¹ , Iyabo W. Oluseyifunmi ¹ , Revathi Shanmugasundaram ² , Adelumola Oladeinde ³ , Oluyinka A. Olukosi ¹ ¹ University of Georgia, Athens, Georgia, United States; ² USDA, ARS, Athens, Georgia, United States; ³ USDA, ARS, Athens, Georgia, United States
11:15 AM	101	Effect of increasing dietary amino acid levels and starch-to-lipid ratios on broiler performance exposed to cyclic heat stress Dilshaan Duhra* ¹ , Denise Beaulieu ¹ , Tory Shynkaruk ¹ , Juliano Dorigam ² , Rose Whelan ² , Karen Schwan-Lardner ¹ ¹ University of Saskatchewan, Saskatoon, Saskatchewan, Canada; ² Evonik Operations GmbH, Hanau-Wolfgang, Germany
11:30 AM	102	Effects of dietary reduction of metabolizable energy and amino acid density on the performance, carcass traits, and nutrient digestibility of broilers from 1 to 49 days Jose I. Vargas* ¹ , Joseph P. Gulizia ¹ , Eva G. Guzman ¹ , Esteban Rosero ¹ , Fabio Valenzuela ¹ , Wilmer J. Pacheco ¹ ¹ Auburn University, Auburn, Alabama, United States
11:45 AM	103	Determination of apparent metabolizable energy and digestibility of energy and lipids in palm oil blends and other feed-grade lipid sources in Ross broilers Matias Moreno Camacho* ¹ , Alissa Moritz ² , Samuel Rochell ¹ , William A. Dozier ¹ ¹ Auburn University, Auburn, Alabama, United States; ² Perdue Animal Nutrition, Salisbury, Maryland, United States
12:00 PM	104	Relative metabolizable energy of soybean gums and soap stocks in precision-fed roosters and relative bioavailable energy in restrict-fed broiler chickens Savannah Wells* ¹ , Seth Hufford ¹ , Rebekah Drysdale ¹ , Luke Parisi ¹ , Michael Kidd ¹ , Benjamin Parsons ¹ ¹ University of Arkansas, Fayetteville, Arkansas, United States

Student Competition: Physiology and Reproduction II

Moderator: Kristen Diehl, USDA-ARS

Room 303 (Abstact Session Room D)

- 8:00 AM 105 **FGF23 receptor expression in the kidney and shell gland of laying hens indicates it is a potential regulator of phosphorus homeostasis for eggshell formation**
R. Alejandra Garcia-Mejia^{*1}, Micaela Sinclair-Black¹, Jordan Castle¹, Folanike Olatunji¹, Roselina Angel², Xabier Arbe³, David Caveno³, Laura E. Ellestad¹ ¹University of Georgia, Athens, Georgia, United States; ²University of Maryland, College Park, Maryland, United States; ³H&N International, Cuxhaven, Germany
- 8:15 AM 106 **Probing the validity of reference point indentation for detecting bone quality differences between caged and cage-free laying hens**
Brittney J. Emmert^{*1}, Dylan W. Seets¹, Sara Cloft¹, Omosalewa M. Fadayomi¹, Darrin M. Karcher¹ ¹Purdue University, West Lafayette, Indiana, United States
- 8:30 AM 107 **Yolk sac tissue gene expression in the context of embryonic development**
Grant G. Bennett^{*1}, Jordan Castle¹, Kloie Varnadoe¹, Laura E. Ellestad¹ ¹University of Georgia, Athens, Georgia, United States
- 8:45 AM 108 **Title: The Effects of Supplemental Choline Chloride on Egg Quality Parameters in Ross 708 Broiler Breeders**
Beverly L. McLendon^{*1}, Emmillie Boot¹, Tatyani Mani¹, Rebecca Wysocky¹, Skye Freeland¹, Zack Lowman², Ramon Malheiros¹ ¹North Carolina State University, Raleigh, North Carolina, United States; ²Balchem Corp, Newton, North Carolina, United States
- 9:00 AM 109 **Lipid biomarkers associated with egg storage and early embryonic mortality in broiler breeder chickens**
Paige D. Meisner^{*1}, Madison Berger², Christina R. Ferreira³, Brenda Flack⁴, Charlene Hanlon², Tom Porter¹, Kristen Diehl⁵ ¹University of Maryland, College Park, Maryland, United States; ²Auburn University, Auburn, Alabama, United States; ³Purdue University, West Lafayette, Indiana, United States; ⁴Cobb-Vantress, Siloam Springs, Arkansas, United States; ⁵USDA-ARS, Beltsville, Maryland, United States
- 9:15 AM 110 **Antibiotic growth promoters appear to influence hepatic regulation of glucose metabolism during heat stress in modern and legacy broilers**
Colin A. Barcelo^{*1}, Laura E. Ellestad² ¹University of Georgia, Athens, Georgia, United States; ²University of Georgia, Athens, Georgia, United States
- 9:30 AM 111 **Effects of oral nanoplastic exposure on intestinal absorption, tissue distribution, and gut health in broiler chickens**
Isabella Ferraro^{*1}, Farzana Yasmin¹, Jinglin Zhang¹, Changqing Wu¹, Yihang Li¹ ¹University of Delaware, Newark, Delaware, United States
- 9:45 AM 112 **Aging-related changes in the intestinal microbiome, metabolic profile, and gene expression in laying hens**
Md Ahosanul Haque Shahid^{*1}, Rajesh Jha², Birendra Mishra³ ¹University of Hawaii at Manoa, Honolulu, Hawaii, United States; ²University of Hawaii at Manoa, Honolulu, Hawaii, United States; ³University of Hawaii at Manoa, Ewa Beach, Hawaii, United States
- 10:00 AM **Break**

- 10:45 AM 113 **Orange corn diet decreased serum corticosterone and improved gait, egg production, egg quality and fertility of breeder Pekin ducks exposed to heat stress**
 Esther M. Oluwagbenga*¹, Evan Rocheford⁶, Torbert Rocheford², Darrin M. Karcher³, Melanie M. Bergman⁴, Jenna M. Schober¹, Serena M. Wesley³, Gregory S. Fraley⁵ ¹Purdue University, West Lafayette, Indiana, United States; ²Purdue University, West Lafayette, Indiana, United States; ³Purdue University, West Lafayette, Indiana, United States; ⁴Purdue University, West Lafayette, Indiana, United States; ⁵Purdue University, West Lafayette, Indiana, United States; ⁶Nutrимаize, West Lafayette, Indiana, United States
- 11:00 AM 114 **Effect of cyclic heat stress and bird strains on blood gas parameters in laying hens**
 Taiwo J. Alabi*¹, Hansol Kim², Sammad F. Olayiwola², Michael Ford², Jacqueline Jacob², Sunday Adedokun¹ ¹University of Kentucky, Lexington, Kentucky, United States; ²University of Kentucky, Lexington, Kentucky, United States

Student Competition: Immunology, Health and Disease: Feed Additives

Moderator: Kimberly Livingston, Optum Immunity

Room 305A-305B (Abstact Session Room E)

- 8:00 AM 115 **Effects of different levels of wheat on *Histomonas meleagridis* and *Eimeria* challenge turkey poults on intestine inflammation and gut microbiota**
 Hamid Reza Rafieian-Naeini*¹, Venkata S. Choppa¹, Hemanth Reddy Katha¹, Venkata Prathap Reddy Keshavareddy¹, Woo K. Kim¹
¹University of Georgia, Athens, Georgia, United States
- 8:15 AM 116 **Colonization Efficacy and Safety of Monovalent Anti-Flagellin C Nanobody-Secreting *Bacillus subtilis* in Broiler Birds**
 Waqas Ishaq*¹, Praveen Reddy Kasu¹, Chengyuan Fang^{2,3}, Jiahe Li², Revathi Shanmugasundaram⁴, Ramesh Selvaraj⁵ ¹University of Georgia, Athens, Georgia, United States; ²University of Michigan, Ann Arbor, Michigan, United States; ³Harbin Medical University Cancer Hospital, Harbin, China; ⁴USDA, ARS, Athens, Georgia, United States; ⁵University of Georgia, Athens, Georgia, United States
- 8:30 AM 117 **Evaluation of a botanical feed additive enriched in polyphenols and saponins in stress-challenged broilers**
 Laney E. Froebel*¹, Bailey Y. Watson¹, Mike J. Rincker², Ryan N. Dilger¹ ¹University of Illinois, Urbana, Illinois, United States; ²DPI Global, Porterville, California, United States
- 8:45 AM 118 **Evaluation of dietary propolis as feed supplement in broilers coinfectd with *Salmonella Typhimurium* and *Eimeria tenella***
 Hanseo Ko*¹, Doyun Goo¹, Indira Neupane¹, Ishwari Gyawali¹, Woo K. Kim¹ ¹University of Georgia, Athens, Georgia, United States
- 9:00 AM 119 **Dietary Seaweed supplementation partially improves intestinal health of broiler chickens under dexamethasone-induced stress**
 Olumide S. Olowe*¹, Olayiwola Adeola¹ ¹Purdue University, West Lafayette, Indiana, United States

- 9:15 AM 120 **Differential effects of direct-fed microbial blends on the mRNA abundance of host defense peptides in broiler chickens during a *Salmonella* Typhimurium challenge**
Davis A. Fenster^{*1}, Rasha Qudsieh², Rami A. Dalloul¹ ¹University of Georgia, Athens, Georgia, United States; ²Novus International, Inc., Chesterfield, Missouri, United States
- 9:30 AM 121 **Effect of *In-Ovo* Administration of Bovine Milk Osteopontin on Hatchability, Chick Quality, Performance, and Immune system development in Hatched Chicks**
Bikas R. Shah^{*1}, Shuja Majeed¹, Nimra Khalid¹, Pankaj Arora², Ali Nazmi^{1,3} ¹Ohio State University, Wooster, Ohio, United States; ²Arla Foods Ingredients, Aarhus, Denmark; ³Ohio State University, Columbus, Ohio, United States
- 9:45 AM 122 **The effect of different doses of isoquinoline alkaloids (IQs) on the performance of broilers exposed to *clostridium perfringens* challenge**
Opeoluwa Judo^{*1}, Ala Abudabos² ¹Alcorn State University, Lorman, Mississippi, United States; ²Alcorn State University, Lorman, Mississippi, United States
- 10:00 AM **Break**
- 10:45 AM 123 **Effects of Chromium Propionate Supplementation During Stress Events on Turkey Performance**
Brooke Wilson^{*1}, Karen Vignale³, Dawn Koltes² ¹Iowa State University, Ames, Iowa, United States; ²Iowa State University, Ames, Iowa, United States; ³Kemin Industries, Fayetteville, Arkansas, United States
- 11:00 AM 124 **Colonization Efficacy and Safety of a Novel Divalent Anti-Flagellin C Nanobody-Secreting *Bacillus subtilis* in Broiler Birds**
Praveen Reddy Kasu^{*1}, Waqas Ishaq², Chengyuan Fang^{3,4}, Revathi Shanmugasundaram⁵, Jiahe Li⁶, Ramesh Selvaraj⁷ ¹University of Georgia, Athens, Georgia, United States; ²University of Georgia, Athens, Georgia, United States; ³University of Michigan, Ann Arbor, Michigan, United States; ⁴Harbin Medical University Cancer Hospital, Harbin, Heilongjiang, China; ⁵USDA, ARS, Athens, Georgia, United States; ⁶University of Michigan, Ann Arbor, Michigan, United States; ⁷University of Georgia, Athens, Georgia, United States
- 11:15 AM 125 **Spleen Metabolome Reveals Immune Modulatory Mechanisms induced by Onion Peel Extract in *Salmonella*-challenged Broiler Chicks**
Odinaka Iwuozo^{*1}, Hye W. Kang¹, Daniel Krakko², Yewande Fasina¹ ¹North Carolina A&T State University, Greensboro, North Carolina, United States; ²North Carolina State University, Raleigh, North Carolina, United States
- 11:30 AM 126 **Optimal violacein dosage for enhancing growth performance and gut health in coccidiosis-challenged broiler chickens: A dose-response regression analysis**
Shan R. Nawarathne^{*1}, Elijah Ogola Oketch¹, Jeseok Lee¹, Kyu-Yeol Son², Jung Min Heo¹ ¹Chungnam National University, Daejeon, Korea (the Republic of); ²CJ Cheiljedang, Suwon, Korea (the Republic of)

Student Competition: Metabolism and Nutrition: Amino Acids

Moderator: Justina Caldas, Aviagen

Room 306A (Abstact Session Room F)

- 8:00 AM 127 **Impact of amino acid levels during rearing on feed intake and body composition**
Jo Ann Chew^{*1}, Laura Star²³, Martin J. Zuidhof¹ ¹*University of Alberta, Edmonton, Alberta, Canada;* ²*Schothorst Feed Research, Lelystad, Netherlands;* ³*Aeres University of Applied Sciences, Dronten, Netherlands*
- 8:15 AM 128 **Evaluating a growth model to predict amino acid requirements for commercial turkey toms with and without performance enhancing feed additives.**
Brendan O. Heinichen^{*1}, James Clothier¹, Dawn Koltes², Phoebe Flaskey², Peter R. Ferket¹ ¹*North Carolina State U niversity, Raleigh, North Carolina, United States;* ²*Iowa State University, Ames, Iowa, United States*
- 8:30 AM 129 **Influence of dietary protein reduction with feed-grade amino acids on performance, body parts weights, and liver transcri32ptome of broilers**
Jose R. Hernandez^{*1}, Jason T. Lee², Roshan Adhikari², Luis F. Romero³, Laura M. Payling³, Samuel Rochell¹ ¹*Auburn University, Auburn, Alabama, United States;* ²*CJ Bio America, Downers Grove, Illinois, United States;* ³*Biofractal, Loule, Portugal*
- 8:45 AM 130 **Assessment of the interactive effect of dietary fat and feedstuff types on their standardized ileal amino acid digestibility and the morphology of small intestine in broiler chickens**
Sujitha Veeraganti^{*1}, Mohammad Pilevar¹, Bhargavi Kasireddy¹, Oluyinka A. Olukosi¹ ¹*University of Georgia, Athens, Georgia, United States*
- 9:00 AM 131 **Standardized ileal digestibility of amino acids in differently processed sunflower meals fed to broiler chickens**
Felix Njeri^{*3}, Alexander Wickhorst³, Tiago Tedeschi dos Santos¹, Gemma Gonzalez-Ortiz², Ton Nu Mai Anh⁵, Hagen Schulze⁴, Anna K. Shoveller³, Lee-Anne Huber³, Elijah G. Kiarie³ ¹*AB Vista, Marlborough, United Kingdom;* ²*AB Vista,, Marlborough, United Kingdom;* ³*University of Guelph, Guelph, Ontario, Canada;* ⁴*Livalta, AB Agri Ltd, Marlborough, United Kingdom;* ⁵*AB Neo, AB Agri Ltd, Videbaek, Denmark*
- 9:15 AM 132 **The effects of Arginine, Threonine, and Valine supplemented throughout a 20-day starter phase on broilers challenged with coccidiosis**
Addison Elstner^{*1}, Rosana Hirai¹, Austin silva¹, Kasey Young¹, Abigail Flores¹, Jason T. Lee², Roshan Adhikari², Chance Williams³, Audrey McElroy¹ ¹*Texas A&M University, College station, Texas, United States;* ²*CJ Bio America Inc, Downers Grove, Illinois, United States;* ³*Wayne-Sanderson Farms, Hoschton, Georgia, United States*
- 9:30 AM 133 **Effects of different leucine levels with *Eimeria* challenge on growth performance and intestinal health in broilers**
Sai Kumar Reddy Ragyari^{*1}, Doyun Goo², Seshidhar R. Gudidoddi¹, Venkata S. Choppa¹, Hemanth R. Katha², Ishwari Gyawali³, Woo K. Kim¹ ¹*University of Georgia, Athens, Georgia, United States;* ²*University of Georgia, Athens, Georgia, United States;* ³*University of Georgia, Athens, Georgia, United States*

- 9:45 AM 134 **The inclusion rate of soybean meal and valine supplementation affect growth performance, carcass weight, body composition, and feed intake regulation in Ross 708**
Doyun Goo^{*1}, Seshidhar R. Gudidoddi¹, Venkata S. Choppa¹, Deependra Paneru¹, Ishwari Gyawali¹, Hemanth R. Katha¹, Woo K. Kim¹ ¹*University of Georgia, Athens, Georgia, United States*
- 10:00 AM **Break**
- 10:45 AM 135 **Interactive Effects of Branched-Chain Amino Acids (Leucine, Isoleucine and Valine) on Performance in Peak Hy-Line W-36 Hens**
Charis A. Waters^{*1}, Roshan Adhikari², Jason T. Lee², Ruben Kriseldi³, Michael Elliot⁴, Li Zhang¹, Kelley G. Wamsley¹, Pratima Adhikari¹
¹*Mississippi State University, Mississippi State, Mississippi, United States*; ²*CJ America Inc., Downers Grove, Illinois, United States*;
³*Aviagen, Huntsville, Alabama, United States*; ⁴*A&E Nutrition Services, LLC, Lititz, Pennsylvania, United States*
- 11:00 AM 136 **Effects of varying levels of dietary tryptophan and leucine on performance, gut health, and plasma serotonin levels in broilers challenged with mixed *Eimeria* spp**
Seshidhar Reddy Gudidoddi^{*1}, Doyun Goo², Hemanth R. Katha¹, Ishwari Gyawali¹, Woo K. Kim¹ ¹*University of Georgia, Athens, Georgia, United States*; ²*University of Georgia, Athens, Georgia, United States*
- 11:15 AM 137 **Exploring optimal digestible histidine to lysine ratio for Ross -708 male broilers in finisher phase (d 24 – 42)**
Muhammad Ali^{*1}, Catherine Fudge¹, Nicolas Mejia-Abaunza¹, Allison Jun T. Kawaoku¹, Federico Etcheverry¹, Jinquan Wang², Roshan Adhikari³, Jason T. Lee³, Chongxiao Chen¹ ¹*University of Georgia, Athens, Georgia, United States*; ²*Auburn University, Auburn, Alabama, United States*; ³*CJ Bio America Inc, Downers Grove, Illinois, United States*
- 11:30 AM 138 **In ovo taurine feeding: enhancing broiler resilience to cyclic heat stress at market age**
Vaishali Gupta^{*12}, Yun-Ji Hwang¹², Yang-Ho Choi¹²³ ¹*Gyeongsang National University, Jinju-si, Korea (the Republic of)*; ²*Gyeongsang National University, Jinju-si, Gyeongsangnam-do, Korea (the Republic of)*; ³*Gyeongsang National University, Jinju-si, Gyeongsangnam-do, Korea (the Republic of)*

Student Competition: Animal Well-Being and Behavior I

Moderator: Marisa Erasmus, Purdue University

Room 302C (Abstact Session Room C)

- 10:45 AM 139 **Comparing beak treatment head holders on chick stress and welfare**
Sameeha Jhetam^{*1}, Tory Shynkaruk¹, Carolin Adler¹, Trever Crowe²¹, Susantha Gomis³, Andrew Van Kessel⁴, Sami Dridi⁵, Karen Schween-Lardner¹ ¹*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*; ²*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*; ³*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*; ⁴*Vaccine and Infectious Disease Organization, Saskatoon, Saskatchewan, Canada*; ⁵*University of Arkansas, Fayetteville, Arkansas, United States*

- 11:00 AM 140 **Evaluating the impact of feeder design and management on feed spillage related behavior in broiler chicks**
Anusha Gautam*¹, Jeremiah D. Davis², Joseph Purswell³, Martha S. Rueda¹, Bethany Baker-Cook¹ ¹*Auburn University, Auburn, Alabama, United States*; ²*Auburn University, Auburn, Alabama, United States*; ³*USDA Agricultural Research Service, Mississippi, Mississippi, United States*
- 11:15 AM 141 **Evaluating the influence of natural and artificial light on broiler behavior across growth stages**
Tarek H. Youssef*¹, Alexandra Jackson², Katie Still¹, Melissa Giplin¹, John Linhoss³, Bethany Baker-Cook¹ ¹*Auburn University, Auburn, Alabama, United States*; ²*Auburn University, Auburn, Alabama, United States*; ³*College of Engineering, Auburn, Alabama, United States*
- 11:30 AM 142 **Laser enrichment device with increased 8-minute duration improved broiler activity without sacrificing welfare outcomes**
Kayla Elmore*¹, Anna Johnson¹, Elizabeth Bobeck¹ ¹*Iowa State University, Ames, Iowa, United States*
- 11:45 AM 143 **Evaluating the impact of age, sex, and lameness on the problem-solving ability of broiler chickens.**
Nicole Dundur Serrano*¹, Bethany Baker-Cook² ¹*Auburn University, Auburn, Alabama, United States*; ²*Auburn University, Auburn University, Alabama, United States*
- 12:00 PM 144 **A new approach to identifying severe woody breast in market age broilers**
Cirenio Hisasaga*¹, Maja Makagon¹ ¹*University of California, Davis, Davis, California, United States*

Symposium: The inflammation saga: Breakthrough nutritional insights for poultry

Chair: Elizabeth Kim, IFF/Danisco Animal Nutrition & Health

Ballroom B

- 1:15 PM 553S **The nutritional impact of gut inflammation**
Doug Korver*^{1,2} ¹*Alpine Poultry Nutrition, Inc., Edmonton, Alberta, Canada*; ²*University of Alberta, Edmonton, Alberta, Canada*
- 1:45 PM 554S **The impact of mineral chelation and potential considerations for nutritional immunity and inflammation**
Leon Marchal*¹, Kirsty Gibbs¹ ¹*Danisco Animal Nutrition & Health, Oegstgeest, Netherlands*
- 2:00 PM 555S **The role of fiber in gut inflammation in poultry**
Rajesh Jha*¹ ¹*University of Hawaii at Manoa, Honolulu, Hawaii, United States*
- 2:15 PM 556S **It's not just about digestibility: the role of amino acids in inflammation**
Woo K. Kim*¹ ¹*University of Georgia, Athens, Georgia, United States*
- 2:30 PM 557S **Managing subclinical inflammation from a commercial perspective - a Nutritionist POV**
John T. Halley*¹ ¹*J Halley Poultry Consulting LLC, Siloam Springs, Arkansas, United States*
- 3:00 PM **Roundtable discussion**

Symposium:Emerging technologies in poultry genomics: Unlocking innovation for the future of sustainable production

Chair: Huaijun Zhou, University of California, Davis

Ballroom C

1:15 PM		Welcome Huaijun Zhou, <i>University of California, Davis</i>
1:25 PM	558S	Functional annotation to support interpretation of genomic analysis Fiona McCarthy* ¹ ¹ <i>University of Arizona, Tucson, Arizona, United States</i>
2:00 PM	559S	CRISPR-based in vitro approaches for investigating chicken genome function Tae-hyun Kim* ¹ ¹ <i>Penn State University, University Park, Pennsylvania, United States</i>
2:35 PM	560S	A census of immune and non-immune cell types of the adaptive immune systems for the bursa and thymus of chicken. Wesley Warren* ¹ ¹ <i>Universtiy of Missouri, Columbia, Missouri, United States</i>
3:15 PM		Break
4:00 PM	561S	Harnessing the Poultry Microbiome: Enhancing Health, Productivity, and Sustainability in Modern Production Glenn Zhang* ¹ ¹ <i>Oklahoma State University, Stillwater, Oklahoma, United States</i>
4:35 PM	562S	Integrative Omics in Poultry Genomics: Unraveling Complex Traits for Enhanced Production and Health Huaijun Zhou* ¹ ¹ <i>University of California, Davis, Davis, California, United States</i>
5:10 PM		Panel discussion

Student Competition: Processing and Products

Moderator: Hudson Thames, Mississippi State University

Room 301A-301B (Abstact Session Room A)

2:00 PM	145	Evaluation of Mild Woody Breast Meat’s Contact Stiffness via Beam Buckling Mechanism Ziyuan Zhao* ¹ , Siya Chen ³ , Yu Wang ¹ , Giri Athrey ¹ , Gregory Archer ² , Dan Feng ⁴ , Ziteng Xu ¹ ¹ <i>Texas A&M University, Bryan, Texas, United States</i> ; ² <i>Texas A&M AgriLife Extension, College Station, Texas, United States</i> ; ³ <i>Texas A&M University, College Station, Texas, United States</i> ; ⁴ <i>Howard University, DC, Washington, United States</i>
2:15 PM	146	Impact of Controlled Atmosphere and Electrical Stunning with Water Immersion and Air Chilling on Muscle-Specific Meat Quality Rishav Kumar* ¹ , Zahidul H. Tushar ¹ , Matthew Hughes ¹ , Matthew A. Bailey ¹ , Dianna Bourassa ¹ ¹ <i>Auburn University, Auburn, Alabama, United States</i>

- 2:30 PM 147 **Effect of Stunning Methods and Deboning Time on Broiler Breast Fillet Quality**
Zahidul H. Tushar*¹, Rishav Kumar¹, Matthew Hughes¹, Dianna Bourassa¹ ¹*Auburn University, Auburn, Alabama, United States*
- 2:45 PM 148 **Effect of peracetic acid dipping on the quality and microbial load of chicken tenderloins**
Joaquin J. Esquivel Vergara*¹, Sarah E. Johnson¹, Tomi Obe¹, Casey M. Owens¹ ¹*University of Arkansas, Fayetteville, Arkansas, United States*
- 3:00 PM 149 **Effects of duck breeds and chicken production types on egg functionality and sensory evaluation through fourteen days of egg storage**
Matthew Hughes*¹, Karla Valeria Casco Gomez¹, Javier S. Garcia², Brigid McCrea³, Jihye An¹, Michelle Hayden¹, Sungeun Cho¹, Dianna Bourassa¹ ¹*Auburn University, Auburn, Alabama, United States*; ²*USDA-ARS, Athens, Georgia, United States*; ³*Alabama Cooperative Extension System, Auburn, Alabama, United States*
- 3:15 PM **Break**
- 4:00 PM 150 **Changes in Eggshell Translucency and Its Relationship with Egg Quality During 28 Days of Cold Storage**
Cassidy A. Morris¹, Leticia Orellana*¹, Haley N. Nabors¹, Charis A. Waters¹, Pratima Adhikari¹, Ken Macklin¹ ¹*Mississippi State University, Starkville, Mississippi, United States*
- 4:15 PM 151 **Evaluation of Factors Influencing the Peelability of Hard-Boiled Eggs in a Commercial Egg Processing Facility**
Morgan Peach*¹, Muhammad Haroon², Dervan Bryan³ ¹*Pennsylvania State University, State College, Pennsylvania, United States*; ²*R.W. Sauder's Inc, Lancaster, Pennsylvania, United States*; ³*Penn State University, State college, Pennsylvania, United States*
- 4:30 PM 152 **Disinfection of poultry processing wastewater using Advanced Oxidation Processes**
Seth O. Adesope*¹, Mark Carlson², Nikolay Barashkov², Casey M. Owens¹, Tomi Obe¹³ ¹*University of Arkansas, Fayetteville, Arkansas, United States*; ²*Micro-Tracers, Inc., San Francisco, California, United States*; ³*Center for Food Safety, University of Arkansas, Fayetteville, Arkansas, United States*
- 4:45 PM 153 **Dealing with big data using restricted maximum-likelihood model (REML) to increase the precision of estimates and generate a better set of results for poultry industry decision makers**
Gabriele J. Kinchin*¹, Lindomar Pereira da Silva Filho¹, Belchiolina Beatriz Fonseca¹, Bruno Serpa Vieira¹ ¹*Federal University of Uberlandia, Uberlandia, Minas Gerais, Brazil*

Student Competition: Metabolism and Nutrition: General Nutrition III

Moderator: Colwayne Morris, Zinpro Corporation

Room 302A-302B (Abstact Session Room B)

- 1:15 PM 154 **Assessing the interaction of resistant starch and dietary crude protein concentrations on growth performance, nutrient digestibility, and digesta pH in broiler chickens**
June Hyeok Yoon^{*1}, Bhargavi Kasireddy¹, Olanrewaju Ayinde¹, Rama Devi Kolli¹, Sujitha Veeraganti¹, Oluyinka A. Olukosi¹ ¹*University of Georgia, Athens, Georgia, United States*
- 1:30 PM 155 **Evaluation of metabolizable energy in ultra-high protein, low oligosaccharide soybean meal compared with conventional soybean meal in precision-fed roosters and ab libitum-fed broilers and turkeys**
Kasey A. Matusik^{*1}, Aaron Forga¹, Seth Hufford¹, Erin Zess², Matthew Begemann², Danielle Graham¹, Benjamin Parsons¹ ¹*University of Arkansas, Fayetteville, Arkansas, United States;* ²*Benson Hill, St. Louis, Missouri, United States*
- 1:45 PM 156 **Determination of metabolizable energy in corn fermented protein and conventional distillers dried grains with solubles using precision-fed roosters and ad libitum-fed broiler chickens**
Luke Parisi^{*1}, Rebekah Drysdale¹, Benjamin Parsons¹ ¹*University of Arkansas, Fayetteville, Arkansas, United States*

Student Competition: Animal Well-Being and Behavior II

Moderator: Prafulla Regmi, University of Georgia

Room 302C (Abstact Session Room C)

- 1:15 PM 157 **Comparing broiler mobility and foot health between two breeds in silvopasture and conventional environments**
Athena He-DeMontaron^{*2}, Jesse L. Grimes¹, Yan L. Campbell¹, Lin Walker¹, Allison Pullin¹ ¹*North Carolina State University, Raleigh, North Carolina, United States;* ²*North Carolina State University, Raleigh, North Carolina, United States*
- 1:30 PM 158 **Warmed perches for mitigating cold stress in laying hens: productivity impacts**
Wendy Gong^{*1}, Marisa A. Erasmus², Yijie Xiong³, Heng-wei Cheng⁴
¹*Purdue University, West Lafayette, Indiana, United States;* ²*Purdue University, West Lafayette, Indiana, United States;* ³*University of Nebraska – Lincoln, Lincoln, Nebraska, United States;* ⁴*USDA, West Lafayette, Indiana, United States*
- 1:45 PM 159 **Warmed perches for mitigating cold stress in laying hens: welfare impacts**
Harliqueen Jacinto^{*1}, Yijie Xiong², Heng-wei Cheng³, Marisa A. Erasmus¹ ¹*Purdue University, West Lafayette, Indiana, United States;* ²*University of Nebraska, Lincoln, Nebraska, United States;* ³*USDA-Agricultural Research Service, West Lafayette, Indiana, United States*

- 2:00 PM 160 **Comparative effects of isolation during early-life and pullet stage on behavior, immune response and cecal microbiota in Hy-Line Brown chickens**
Hari Marasini^{*1}, Casey Nestor², Young Min Kwon³, Rami A. Dalloul¹, Prafulla Regmi¹ ¹*University of Georgia, Athens, Georgia, United States*; ²*Colorado State University, Fort Collins, Colorado, United States*; ³*University of Arkansas, Fayetteville, Arkansas, United States*
- 2:15 PM 161 **Parting the feathers: Examining the effects of northern fowl mite infestation level on cage-free laying hen welfare**
Hayley L. Sutherland^{*1}, Luiz F. Brito¹, Amy C. Murillo², Marisa A. Erasmus¹ ¹*Purdue University, West Lafayette, Indiana, United States*; ²*University of California, Riverside, California, United States*
- 2:30 PM 162 **Fowl Moods: Age- and environment-related differences in vocalizations and brain serotonin activity in laying hens during an isolation fear test.**
Isabella von Seggern^{*1}, Gregory S. Fraley¹ ¹*Purdue University, West Lafayette, Indiana, United States*
- 2:45 PM 163 **Characterizing the development of the behavioral repertoire of turkey poults during early-life**
Alexandra Jackson^{*1}, Dianna Bourassa¹, Joseph Purswell², Bethany Baker-Cook¹ ¹*Auburn University, Auburn, Alabama, United States*; ²*USDA ARS Poultry Research Unit, Starkville, Alabama, United States*
- 3:00 PM 164 **Using a preference test to evaluate the relationship between feather pecking and foraging in turkey toms**
Brittany N. Bolger^{*1}, Blair C. Downey², Jesse L. Grimes¹, Allison Pullin¹ ¹*North Carolina State University, Raleigh, North Carolina, United States*; ²*University of Tennessee, Knoxville, Knoxville, Tennessee, United States*
- 3:15 PM **Break**
- 4:00 PM 165 **Effect of time of day preference and male-male competition on broiler breeder mating behavior and fertility during the early production period.**
Marcela A. Quino^{*1}, Nicole Dundur Serrano², Charlene Hanlon³, Bethany Baker-Cook⁴ ¹*Auburn University, Auburn, Alabama, United States*; ²*Auburn University, Auburn, Alabama, United States*; ³*Auburn University, Auburn, Alabama, United States*; ⁴*Auburn University, Auburn University, Alabama, United States*
- 4:15 PM 166 **Serotonin and dopamine activity associated with aggressive feather pecking in Pekin ducks**
Jenna M. Schober^{*1}, Gregory S. Fraley¹ ¹*Purdue University, Lafayette, Indiana, United States*
- 4:30 PM 167 **Transportation elicits a decrease in serotonergic activity, but not dopaminergic activity, in 5-day-old grow-out Pekin ducklings.**
Erica R. Roge^{*1}, Isabella von Seggern², Jenna M. Schober³, Gregory S. Fraley⁴ ¹*Purdue University, West Lafayette, Indiana, United States*; ²*Purdue University, Columbia City, Indiana, United States*; ³*Purdue University, Lafayette, Indiana, United States*; ⁴*Purdue University, West Lafayette, Indiana, United States*
- 4:45 PM 168 **Dietary Flaxseed Oil Modulates metabolites crossing the Blood-brain barrier and Enhance Growth Performance in Broiler Chickens**
Safiu Suberu^{*1}, Paul Omaliko¹, Nathanael I. Lichti², Bruce Cooper², Deji A. Ekunseitan³, Yewande Fasina¹ ¹*North Carolina A&T State University, Greensboro, North Carolina, United States*; ²*Bindley Bioscience Center, Purdue University, West Lafayette, Indiana, United States*; ³*North Carolina Agricultural and Technical State University, Greensboro, North Carolina, Greensboro, North Carolina, United States*

- 5:00 PM 169 **Reference point indentation correlates with bone mechanical properties in chicken tibia**
Omosalewa M. Fadayomi^{*1}, Dylan W. Seets², Brittney J. Emmert³, Sara Cloft⁴, Darrin M. Karcher⁵ ¹*Purdue University, Lafayette, Indiana, United States*; ²*Purdue University, West Lafayette, Indiana, United States*;
³*Purdue University, Lafayette, Indiana, United States*; ⁴*Purdue University, West Lafayette, Indiana, United States*; ⁵*Purdue University, West Lafayette, Indiana, United States*
- 5:15 PM 170 **A computer vision method to detect foraging behavior in cage-free hens**
Samin Dahal^{*1}, Bidur Paneru², Anjan Dhungana², Xiao Yang¹, Lilong Chai³ ¹*University of Georgia, Athens, Georgia, United States*;
²*University of Georgia, Athens, Georgia, United States*; ³*University of Georgia, Athens, Georgia, United States*

Student Competition: Metabolism and Nutrition: Vitamins and Minerals

Moderator: Timothy Boltz, Mississippi State University

Room 303 (Abstact Session Room D)

- 1:15 PM 171 **Graded levels of riboflavin effects on growth performance during the summer months in turkey hens**
Victoria Wilson^{*1}, R S. Beyer², Haley Otott¹, Carter D. Minson¹, Diego Lopez¹, Walter G. Friesen¹, Allison Bloome¹, Chad Paulk¹ ¹*Kansas State University, Manhattan, Kansas, United States*; ²*Kansas State University, Manhattan, Kansas, United States*
- 1:30 PM 172 **Role of 25-hydroxyvitamin D₃ on inflammatory and biochemical responses in coccidiosis-vaccinated broilers challenged with *Eimeria* spp**
Nicolas Mejia Abaunza^{*1}, Catherine Fudge¹, Muhammad Ali¹, Huihui Ma¹, Venkata S. Choppa¹, Woo K. Kim¹, Cristiano Bortoluzzi², Estefania Perez Calvo², Michael Kogut³, Chongxiao Chen¹ ¹*University of Georgia, Athens, Georgia, United States*; ²*dsm-firmenich, College Station, Texas, United States*; ³*USDA-ARS Southern Plains Agricultural Research Center, College Station, Texas, United States*
- 1:45 PM 173 **Egg quality and hatchability response to canthaxanthin and 25-Hydroxyvitamin D3 in broiler breeder hens**
Patrick Tamatey^{*1}, Shelby Corray², Brooke C. Bodle², John W. Boney¹, Dervan Bryan³ ¹*Penn State, State College, Pennsylvania, United States*; ²*DSM-Firmenich Nutritional Products, Plainsboro, New Jersey, United States*; ³*Penn State University, State college, Pennsylvania, United States*
- 2:00 PM 174 **Effects of multiple 25 Hydroxyvitamin D sources on the performance and eggshell quality of 95-week-old white laying hens**
Bethany Alexander^{*1}, Samantha Huffer¹, Staci Cantley², Mike Persia¹ ¹*Virginia Tech, Blacksburg, Virginia, United States*;
²*Huvepharma, Morgantown, West Virginia, United States*
- 2:15 PM 175 **Comparison of relative Ca bioavailability based on bone ash and apparent ileal Ca digestibility with and without phytic acid in broiler chickens**
Rebekah Drysdale^{*1}, Benjamin Parsons¹ ¹*University of Arkansas, Fayetteville, Arkansas, United States*

- 2:30 PM 176 **Effect of different limestone sources, solubility and inclusion of phytase on apparent ileal digestibility of Ca and P in broiler chickens**
Juan Carlos Valencia Beltran^{*1}, Qian Zhang², Aaron Cowieson², Pam L. Utterback¹, Jason Lee Emmert¹, Carl Parsons³ ¹University of Illinois at Urbana-Champaign, Urbana, Illinois, United States; ²dsm-firmenich Animal Nutrition and Health, Kaiseraugst, Switzerland; ³University of Illinois, Champaign, Illinois, United States
- 2:45 PM 177 **Evaluating the additivity of digestible calcium in a mixed diet formulated from organic and inorganic dietary calcium sources**
Opeadura T. Osunbami^{*1}, Olayiwola Adeola¹ ¹Purdue University, West Lafayette, Indiana, United States
- 3:00 PM 178 **Phosphorus requirements of laying hens in the presence of a mega dose of phytase**
Raquel Medeiros Horn^{*1}, Sergio L. Vieira¹, Douglas D. Maria¹, Yuri J. Olabarriaga¹, Walter E. Altevogt¹, Luana A. Lopes da Cunha¹, Rodolfo Francisco B. Leiskosky¹ ¹UFRGS, Porto Alegre, Rio Grande do Sul, Brazil
- 3:15 PM **Break**
- 4:00 PM 179 **Evaluating the effects of different supplemental Selenium sources on Pekin duck growth performance and tissue deposition**
Isabella R. Villarreal^{*1}, Colby Allensworth², Rosana Hirai², Rob Shirley³, Ariel Bergeron⁴, Mohammed Amine Hachemi⁵, Denise Cardoso⁵, Gregory Archer⁶ ¹Texas A&M University, College Station, Texas, United States; ²Texas A&M University, Bryan, Texas, United States; ³Adisseo, Alpharetta, Georgia, United States; ⁴Adisseo, Wake Forest, North Carolina, United States; ⁵Adisseo, Antony, France; ⁶Texas A&M AgriLife Extension, College Station, Texas, United States
- 4:15 PM 180 **The interaction of dietary copper levels and litter conditions on broiler growth performance**
Allison Jun T. Kawaoku^{*1}, Nicolas Mejia-Abaunza¹, Catherine Fudge¹, Muhammad Ali¹, Huihui Ma², Venkat U. Bodempudi¹, Tongshuai Liu³, Guoming Li¹, Jinqian Wang⁴, Chongxiao Chen⁵ ¹University of Georgia, Athens, Georgia, United States; ²Institute of Animal Husbandry, Henan Academy of Agricultural Sciences, Athens, Georgia, United States; ³Henan University of Animal Husbandry and Economy, Zhengzhou, Henan, China; ⁴Auburn University, Auburn, Alabama, United States; ⁵University of Georgia, Athens, Georgia, United States
- 4:30 PM 181 **Reducing copper requirement with organic supplementation in pullets**
Vinício d. Cardoso^{*1}, Letícia A. Silva¹, Allanna H. Corsino¹, Ana J. Garcia¹, Luiz F. Costa e Silva², Adriana Nascimento², Tatiana C. Santos¹ ¹State University of Maringá, Maringá, PR, Brazil; ²Alltech, Maringá, Paraná, Brazil
- 4:45 PM 182 **Use of Two Selenium Sources in the Diets of Heavy Breeder Hens and Their Effect on the Small Intestine of Embryos at 17 Days of Incubation**
Manuela B. Netto^{*1}, Renata Rodrigues Gomes¹, Fernanda Alves Duarte¹, Laura Alves Duarte¹, Kalebe de Oliveira Maia¹, Elizabeth Batista Martins¹, Daniel Graziani¹, Ana Maria de Souza Almeida¹, Adriana Santana do Carmo¹, Jose Henrique Stringhini¹ ¹Universidade Federal de Goiás, Goiânia, GO, Brazil
- 5:00 PM 183 **Effect of trace mineral sources on antioxidant response and chick quality under heat stress**
Luana A. Lopes da Cunha^{*1}, Sergio L. Vieira¹, Alba Fireman², Cibele A. Torres², Douglas D. Maria¹, Raquel Medeiros Horn¹, Yuri J. Olabarriaga¹, Walter E. Altevogt¹, Rodolfo Francisco B. Leiskosky¹
¹UFRGS, Porto Alegre, Rio Grande do Sul, Brazil; ²Zinpro Corporation, Eden Prairie, Minnesota, United States

- 5:15 PM 184 **Zinc oxide adversely impacts broiler development starting at moderate supplemental levels**
Yuri J. Olabarriaga^{*1}, Sergio L. Vieira¹, Douglas D. Maria¹, Raquel Medeiros Horn¹, Walter E. Altevogt¹, Luana A. Lopes da Cunha¹, Rodolfo Francisco B. Leiskosky² ¹*UFRGS, Porto Alegre, RS, Brazil*;
²*UFRGS, Porto Alegre, Rio Grande do Sul, Brazil*

Student Competition: Management and Production

Moderator: Dawn Koltes, Iowa State University

Room 305A-305B (Abstact Session Room E)

- 1:15 PM 185 **Making a Splash: Environmental enrichment has no effect on brain dopamine and serotonin levels or synaptic activity in Pekin ducks**
Nina Wilson^{*1}, Jenna M. Schober², Gregory S. Fraley³ ¹*Purdue University, Knox, Indiana, United States*; ²*Purdue University, Lafayette, Indiana, United States*; ³*Purdue University, West Lafayette, Indiana, United States*
- 1:30 PM 186 **The impact of floor hatching on hatchability and performance of broiler chicks**
Manuel A. Arango^{*1}, Brian Fairchild¹, Michael Czarick¹ ¹*University of Georgia, Athens, Georgia, United States*
- 1:45 PM 187 **Thermal responses to feed intake in newly hatched chicks**
Lillian Brito Lins^{*1}, Alexandra Jackson², Bethany Baker-Cook³ ¹*Auburn University, Auburn, Alabama, United States*; ²*Auburn University, Auburn, Alabama, United States*; ³*Auburn University, Auburn University, Alabama, United States*
- 2:00 PM 188 **Impact of feeding regimens during rearing on reproductive parameters in broiler breeder hens through sexual maturity**
Madison Berger^{*2}, Olivia McGuire², Kristian Almendares², Patricia Quino², Brenda Flack³, Kristen Diehl¹, Charlene Hanlon² ¹*USDA-ARS, Beltsville, Maryland, United States*; ²*Auburn University, Auburn, Alabama, United States*; ³*Cobb-Vantress, Siloam Springs, Arkansas, United States*
- 2:15 PM 189 **Effect of breeder age and storage temperature on eggshell translucency of Cobb eggs**
Erick Shimura Kawaushi^{*1}, Paola A. Amaya Hernandez¹, Edgar L. Molina Villarraga¹, Caleb M. Marshall¹, Cesar Guato Guaman¹, Duarte Neves², Edgar O. Oviedo-Rondon¹ ¹*North Carolina State University, Raleigh, North Carolina, United States*; ²*Zinpro Corporation, Eden Prairie, Minnesota, United States*
- 2:30 PM 190 **Evaluating the biofilm formation of *Salmonella* and *E. coli* in poultry drinking water system**
Sai Aneesh Reddy Cheruvu^{*1}, Tomi Obe¹² ¹*University of Arkansas, Fayetteville, Arkansas, United States*;
²*University of Arkansas, Fayetteville, Arkansas, United States*
- 2:45 PM 191 **Does exposure to blue light from 0-15 or 0-17 weeks of age affect aggressive behaviours, fear, and stress levels of egg-laying pullets reared to 17 weeks of age?**
Zoe C. Uhren^{*1}, Tory Shynkaruk¹, Carolin Adler¹, Trever Crowe², Karen Schwean-Lardner¹ ¹*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*; ²*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*

- 3:00 PM 192 **The impact of hatching method on growth performance in broiler chickens**
Carria Xie*¹, Shemil Macelline¹, Mehdi Toghyani², Sonia Liu¹
¹*University of Sydney, Sydney, New South Wales, Australia;* ²*University of Sydney, Brownlow Hill, New South Wales, Australia*
- 3:15 PM **Break**
- 4:00 PM 193 **Production performance and egg yolk omega 3 fatty acids in laying hens fed ahiflower seed and its press cake during peak and late production phases**
Roseline O. Ogory*¹, Deborah I. Adewole¹ ¹*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*
- 4:15 PM 194 **Supplementation of novel probiotics improves layer performance while reducing egg-borne *Salmonella* transmission**
Ragini Reddyvari*¹, Yuying Ren¹, Veera Venkata Praveen Raja Kosuri¹, Eswari Kanike¹, Sulthana Humayoon Muttathukonam¹, Mary Anne Amalaradjou¹ ¹*University of Connecticut, Storrs, Connecticut, United States*

Wednesday, July 16

PSA Business Meeting

Chair: Martin J. Zuidhof, University of Alberta

Ballroom B

7:00 AM

SYMPOSIA AND ORAL SESSIONS

Symposium:

**Honoring Dr. Dibner: Pioneering poultry science
and lasting influence on early nutrition, gut
health, and cellular metabolism**

Chair: Robert E. Buresh, Novus International Inc.

Ballroom B

- | | | |
|----------|------|---|
| 9:00 AM | | Introduction
Robert E. Buresh, <i>Novus International Inc.</i> |
| 9:10 AM | 566S | Dr. Julia Dibner: A Lifelong Dedication to Advancing Poultry Science – Accomplishments, Milestones, and Lasting Impact"
Mercedes Vazquez-Anon* ¹ ¹ <i>Novus International Inc., Chesterfield, Missouri, United States</i> |
| 9:40 AM | 563S | Building Strong Foundations: Advances in Early Nutrition for Poultry
Zehava Uni* ¹ ¹ <i>Hebrew University, Rehovot, Israel</i> |
| 10:10 AM | 564S | A legacy of scientific influence: Intestinal physiology measures and approaches with meaningful impact
Todd J. Applegate* ¹ ¹ <i>University of Georgia, Athens, Georgia, United States</i> |
| 10:40 AM | 565S | That is so cool! I know right! To glutathione and beyond.
Walter G. Bottje* ¹ ¹ <i>Division of Agriculture, University of Arkansas, Fayetteville, Arkansas, United States</i> |
| 11:10 AM | | Roundtable discussion |

Symposium: Inflammation is not a 4-letter word: How to influence immunity while not compromising performance

Chair: Kimberly A. Livingston, Optum Immunity

Ballroom C

- 9:00 AM 567S **The Essential Evil: Inflammation's Role in Forging Long-Lasting Immunity**
Kimberly Livingston*¹ ¹*Optum Immunity, Siler city, North Carolina, United States*
- 9:30 AM 568S **The Good, the Bad, and the Ugly of Gut Inflammation**
Michael Kogut*¹ ¹*USDA-ARS, College Station, Texas, United States*
- 10:00 AM 569S **Balancing inflammation and immunity to optimize performance**
Matthew K. Jones*¹ ¹*Southern Poultry Research Group, Inc, Watkinsville, Georgia, United States*
- 10:30 AM 570S **Immune Modulation Using Microbiota-Centric Feed Additives**
Ramesh Selvaraj*¹, Revathi Shanmugasundaram² ¹*University of Georgia, Athens, Georgia, United States*; ²*USDA, ARS, Athens, Georgia, United States*
- 11:00 AM 571S **Immune modulation using host directed additives**
Ryan Arsenault*¹ ¹*USDA ARS, College Station, Texas, United States*
- 11:30 AM 572S **Improving animal health through antibody-driven targeted immune modulation**
Pradyut Paul*¹ ¹*Optum Immunity, Waterloo, Wisconsin, United States*

Microbiology and Food Safety I

Moderator: Aaron Bodie, University of Georgia

Room 301A-301B (Abstact Session Room A)

- 9:00 AM 195 **Food Safety and Salmonella Ecology in Poultry Production: Current Perspectives**
Steven C. Ricke*¹ ¹*University of Wisconsin, Madison, Wisconsin, United States*
- 9:30 AM 196 **Comparing broiler microbiome profiling methods for practical application**
Jean E. De Oliveira*¹, Anne Goderis¹, Henk Enting¹, Luisa A. Gene¹, Hsuan Chen¹, Donghyeok Lee², Evgeni Levin² ¹*Cargill Animal Nutrition and Health, Wayzata, Minnesota, United States*; ²*Horaizon, Delft, Netherlands*

- 9:45 AM 197 **Broiler litter physicochemical properties and microbiome can be used for predicting pre-harvest *Salmonella* contamination**
Taejung Chung^{*79}, Adelumola Oladeinde⁷, Zaid Abdo¹², Maggie Weinroth³, Connie Mou⁴, Ardeshir Adeli⁵, Torey Looft⁶, Michael J. Rothrock⁷, Charlene Jackson⁸, Xiang Li⁷, Sohyun Cho⁷, Jodie P. Lawrence⁷ ¹Colorado State University, Fort Collins, Colorado, United States; ²Colorado State University, Fort Collins, Colorado, United States; ³Illumina, Inc., San Diego, California, United States; ⁴Danisco Animal Nutrition & Health (IFF), Cedar Rapids, Iowa, United States; ⁵USDA-ARS, Mississippi State, Mississippi, United States; ⁶USDA-ARS, Ames, Iowa, United States; ⁷USDA-ARS, Athens, Georgia, United States; ⁸USDA-ARS, Athens, Georgia, United States; ⁹USDA-ARS, Beltsville, Maryland, United States
- 10:00 AM 198 **Effect of chicken breed on *Campylobacter* load and prevalence in pastured poultry management systems**
Walid Al Hakeem^{*1}, Minh Kim¹, Sohyun Cho⁴, Xiang Li⁴, Laura E. Ellestad², Prafulla Regmi³, Adelumola Oladeinde⁴, Michael J. Rothrock⁴ ¹ORISE, Athens, Georgia, United States; ²University of Georgia, Athens, Georgia, United States; ³University of Georgia, Athens, Georgia, United States; ⁴USDA-ARS, Athens, Georgia, United States
- 10:15 AM 199 **Temporal and regional differences in antibiotic-resistant *Salmonella* populations in chicken across the United States**
Tomi Obe^{*13}, Roberta Anderson Shafer¹², Eniola Betiku¹ ¹University of Arkansas, Fayetteville, Arkansas, United States; ²University of Arkansas, Fayetteville, Arkansas, United States; ³University of Arkansas, Fayetteville, Arkansas, United States
- 10:30 AM 200 **Effect of environmental conditions on survivability of *Campylobacter jejuni* in used broiler litter**
Matthew A. Bailey^{*1}, Dianna Bourassa² ¹Auburn University, Auburn, Alabama, United States; ²Auburn University, Auburn, Alabama, United States
- 10:45 AM 201 **Missing microbes and excessive resistance genes: the impact of intensive rearing systems on the broiler gut microbiome**
Camila Schultz Marcolla^{*1}, Benjamin P. Willing¹ ¹University of Alberta, Edmonton, Alberta, Canada
- 11:00 AM 202 **Assessing *Salmonella* survival and invasion on shell eggs during refrigeration**
Justin H. Lowery^{*1}, Taylor K. O'Lear Reid², Kenneth E. Anderson¹, Aaron Kiess¹, Christina Sigmon¹, Rebecca Wysocky¹, Yabaiz Tahir¹, Lin Walker¹ ¹North Carolina State University, Raleigh, North Carolina, United States; ²NCSU, Raleigh, North Carolina, United States
- 11:15 AM 203 **Whole genome sequencing of *Pseudomonas* isolates from fresh ground turkey reveals the presence of *Pseudomonas aeruginosa* virulence and resistance genes**
Dhananjai Muringattu Prabhakaran^{*1}, Anup Kollanoor Johny² ¹University of Minnesota, Saint Paul, Minnesota, United States; ²University of Minnesota, Woodbury, Minnesota, United States
- 11:30 AM 204 **Assessment of Poultry Transport Coop Microbiota Post Cleaning and Disinfection**
Lindsey A. Wythe^{*1}, Yuhua Z. Farnell², Morgan Farnell¹ ¹Texas A&M University, College Station, Texas, United States; ²Texas A&M University, College Station, Texas, United States

- 11:45 AM 205 **Dynamic prevalence and distribution of *Salmonella enterica* in chicken rinses across the United States**
 Roberta Anderson Shafer^{*1,2}, Jinquan Wang³, Tomi Oba^{2,4} ¹University of Arkansas, Fayetteville, Arkansas, United States; ²University of Arkansas, Fayetteville, Arkansas, United States; ³Auburn University, Auburn, Alabama, United States; ⁴University of Arkansas, Fayetteville, Arkansas, United States

Genetics and Molecular Biology

Moderator: Monika Proszkowiec-Weglarz, USDA, ARS

Room 303 (Abstact Session Room D)

- 9:00 AM 206 **Benefit of genomic breeding values to evaluate egg quality traits in layers**
 Petek Settar^{*1}, Anna Wolc² ¹Hy-Line International, Dallas Center, Iowa, United States; ²Iowa State University, Ames, Iowa, United States
- 9:30 AM 207 **CT Imaging for Poultry Breeding: A Novel CT-Derived Lung Trait for Turkey (*Meleagris gallopavo*) Genetic Improvement**
 Natalee T. Richardson¹, Emily M. Leishman⁶, Bayode O. Makanjuloo^{*2}, Xuechun Bai³, Ryley Vanderhout³, Jennifer L. Ellis⁴, Shai Barbut⁵, Christine F. Baes⁴, Ricarda E. Jahnel⁴ ¹University of Guelph, Guelph, Ontario, Canada; ²University of Guelph, Guelph, Ontario, Canada; ³Hendrix Genetics, Kitchener, Ontario, Canada; ⁴University of Guelph, Guelph, Ontario, Canada; ⁵University of Guelph, Guelph, Ontario, Canada; ⁶Aarhus University, Tjele, Denmark
- 9:45 AM 208 **Role of mitochondrial network dysregulation in broiler woody breast myopathy**
 Elizabeth Greene^{*1}, Paula Chen², Carrie L. Walk³, Mike Bedford³, Sami Dridi¹ ¹University of Arkansas, Fayetteville, Arkansas, United States; ²USDA-ARS, Columbia, Missouri, United States; ³AB Vista, Marlborough, United Kingdom
- 10:00 AM 209 **Collagen characterization in broiler *Pectoralis major* muscles affected by wooden breast myopathy**
 Martina Bordini^{*1}, Massimiliano Petracci¹, Elena Babin¹, Roberto Gotti², Francesca Soglia¹ ¹Alma Mater Studiorum University of Bologna, Cesena, Italy; ²Alma Mater Studiorum University of Bologna, Bologna, Italy
- 10:15 AM 210 **Liver RNA-seq analysis of meat-type chickens supplemented with or without glucose and reared under chronic heat stress**
 Marie C. Milfort¹, Ahmed F. Ghareeb¹, Josephine Kwakye¹, Oluwatomide W. Ariyo¹, Alberta L. Fuller¹, Romdhane Rekaya², Samuel E. Aggrey^{*1} ¹University of Georgia, Athens, Georgia, United States; ²University of Georgia, Athens, Georgia, United States
- 10:30 AM 211 **Optimization of culture conditions for chicken tracheal epithelial cells to investigate avian influenza virus infection**
 Paula Chen^{*1}, Rachel Read², Suja Aarattuthodi¹, Wenjun Ma⁴, Wesley Warren³ ¹USDA-ARS, Columbia, Missouri, United States; ²University of Missouri, Columbia, Missouri, United States; ³Universtiy of Missouri, Columbia, Missouri, United States; ⁴University of Missouri, Columbia, Missouri, United States
- 10:45 AM 212 **Assessing Population Dynamics and AMR Trends in *Salmonella* Infantis**
 Sabin Poudel^{*1}, Dianna Bourassa², Jinquan Wang³ ¹Auburn University, Auburn, Alabama, United States; ²Auburn University, Auburn, Alabama, United States; ³Auburn University, Auburn, Alabama, United States

- 11:00 AM 213 **Potential of Shotgun Metagenomic Analyses for In-depth Taxonomic Characterization of Microbial Communities in Egg Wash and Poultry Litter from a Laying Hen Facility**
Katherine Stansifer², Elena G. Olson^{*1}, Haley Tarcin¹, Max Peckenshneider¹, Casey McGinley², Jake Byrnes², Steven C. Ricke³
¹UW-Madison, Madison, Wisconsin, United States; ²Barnwell, New York, New York, United States; ³University of Wisconsin, Madison, Wisconsin, United States
- 11:15 AM 214 **Longitudinal Analysis of Broiler Cecal Microbiome: Unraveling the Species Level Dynamics Across Age and Sex**
Farazi Rahman^{*1}, Erasmo A. Flores Granados¹, Samuel Rochell¹, Dianna Bourassa¹, Sabin Poudel¹ ¹Auburn University, Auburn, Alabama, United States
- 11:30 AM 215 **Breed-Specific Variations in Tracheal Microbiome of Broiler Chickens**
Sabin Poudel^{*1}, Erasmo A. Flores Granados¹, Samuel Rochell¹, Dianna Bourassa¹ ¹Auburn University, Auburn, Alabama, United States
- 11:45 AM 216 **Development of universal real-time PCR tests for the detection and quantification of fowl aviadenoviruse**
Amina Kardoudi^{*1} ¹Institute of Agriculture and Veterinary Medicine Hassan II, Casablanca, CASABLANCA, Morocco

Metabolism and Nutrition: Enzymes

Moderator: Kelley Wamsley, Mississippi State University

Room 305A-305B (Abstact Session Room E)

- 9:00 AM 217 **Enzymes in poultry nutrition: Where do we stand?**
Xavière Rousseau^{*1}, Craig Wyatt¹, Mike Bedford¹ ¹AB VISTA, Marlborough, United Kingdom
- 9:30 AM 218 **Evaluation of different commercial brands of phytase enzymes on the growth responses and tibia mineralization of broiler chickens**
Sergio Gómez-Rosales^{*1}, María d. Angeles¹, Guangmin Zhang²
¹INIFAP, Queretaro, Mexico; ²Beijing Challenge Group, Beijing, Beijing, China
- 9:45 AM 219 **Effects of xylanase and phytase supplementation on cecal microbiota composition and short-chain fatty acid production in laying hens**
Tatiana C. Santos^{*1}, Vinicio d. Cardoso¹, Adriana Nascimento², James Pettigrew³, Jeferson Lourenco⁴ ¹State University of Maringá, Maringa, PR, Brazil; ²Alltech, Maringá, PR, Brazil; ³Pettigrew Research Services, Tubac, Arizona, United States; ⁴University of Georgia, Athens, Georgia, United States
- 10:00 AM 220 **Sfericase Protease: Improving protein solubility in diverse soybean meal varieties**
Camila d. Cardoso^{*1}, Jacqueline S. de Souza¹, Diogo F. Rosso³, Tine V. Jensen³, Vitor B. Fascina² ¹Novonesis Latin America, Araucária, PR, Brazil; ²dsm-firmenich Brasil, São Paulo, Brazil; ³Novonesis, Kogens-Lyngby, Denmark
- 10:15 AM 221 **Protease supplementation can ameliorate negative effects of high trypsin inhibitor in broiler diets**
David Sanchez Torres^{*1}, Jorge Prada², Gonzalo Rueda¹, Rasha Qudsieh¹, Eduardo Castro³ ¹Novus, Chesterfield, Missouri, United States; ²Novus, Chesterfield, Missouri, United States; ³Independent Consultant, Barranquilla, Colombia

- 10:30 AM 222 **Evaluation of the Use of different levels of Arabinoxylans Insolubles in Broiler Diet**
Ingrid Martinez^{*1}, Alexandre Barbosa¹, Miliane Alves¹, Xavier Rousseau¹ ¹*AB Vista, Ciudad de Mexico, Ciudad de Mexico, Mexico*
- 10:45 AM 223 **Effects of a multi-component protease on growth performance and nitrogen excretion in broilers fed low crude protein diets**
Glenmer B. Tactacan^{*1}, Danielle Marie Estacio¹, Olufemi Babatunde¹, Ludovic Lahaye¹, Sayantani Arora², Sudipto Halder² ¹*Jefo Nutrition Inc., Saint-Hyacinthe, Quebec, Canada*; ²*Agrivet Research & Advisory, Kolkata, India*
- 11:00 AM 224 **Reduction in ribonucleotide reductase subunit RRM2 links to mitochondria dysfunction and altered gut health of woody breast chicken**
Majid Shakeri^{*1}, Elizabeth Ziabtchenko¹, Janghan Choi^{1,2}, Hamid Reza Rafieian Naeini³, Woo K. Kim³, Byungwhi Kong¹, Hong Zhuang¹, Brian Bowker¹ ¹*USDA-ARS, Athens, Georgia, United States*; ²*Department of Animal and Food Sciences, Lubbock, Texas, United States*; ³*University of Georgia, Athens, Georgia, United States*
- 11:15 AM 225 **Evaluation of Different Inclusion Levels of Novel Phytase on Broiler Growth Performance**
Yumeng Xi², Zhaoxing Li², Hongyan Wang², Xinhong Zhao¹, Pengcheng Xue³, Heng Lei¹, Hong Cao³, Shuyu Cai^{*1}, Hao Zhang²
¹*Challenge Biotechnology Co., Ltd, Chicago, Illinois, United States*;
²*Nanjing Agricultural University, Nanjing, China*; ³*InnovHope Inc., Framingham, Massachusetts, United States*
- 11:30 AM 226 **Determination of phosphorus release value of a novel *E.coli* phytase from 250 to 2,000 FTU/kg in broiler chickens fed a corn and soybean meal based diet**
Xuerong Song^{*1}, Elijah G. Kiarie² ¹*Wuhan Sunhy Biology Co., Ltd, Wuhan, Hubei, China*; ²*University of Guelph, Guelph, Ontario, Canada*
- 11:45 AM 227 **Can phytase substitute the entire dietary inorganic phosphorus for broiler?**
Xuerong Song^{*1} ¹*Wuhan Sunhy Biology Co., Ltd, Wuhan, Hubei, China*

Management and Production I

Moderator: Gregory Fraley, Purdue University

Room 306A (Abstact Session Room F)

- 9:00 AM 228 **Where is the poultry production sector going with behavior, range area, nutrition, and land areas in the US**
Kenneth E. Anderson^{*1} ¹*North Carolina State University, Raleigh, North Carolina, United States*
- 9:30 AM 229 **Impact of plastic huts and metal ramps as environmental enrichment on welfare and performance in Ross 308 broilers to 32 d of age**
Carolyn Adler^{*1}, Tory Shynkaruk¹, Chantal Goeree², Kathleen Long², Karen Schwean-Lardner¹ ¹*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*; ²*Maple Leaf Foods Inc., Mississauga, Ontario, Canada*
- 9:45 AM 230 **Effect of rearing by sex or as-hatched on growth performance, body composition, and carcass yield of Ross 308 broilers from 0 to 43 days of age**
Lewis Aguirre^{*1}, Matheus Reis¹, Ana Isabel Garcia-Ruiz¹ ¹*Trouw Nutrition, Toledo, Toledo, Spain*

- 10:00 AM 231 **Manure Accumulation and Removal Study for Raised Flooring Operation in Broiler Houses**
Alex V. Samoylov¹, Brian Fairchild², Parth Mandrekar^{*1} ¹*Georgia Tech, Atlanta, Georgia, United States*; ²*University of Georgia, Georgia, Georgia, United States*
- 10:15 AM 232 **Influence of Different Litter Regimens on Ceca Microbiota Profiles in Salmonella-challenged Broiler Chicks**
Deji A. Ekunseitan^{*1}, Yewande Fasina¹, Scott Harrison¹, Ibukun Ogunade² ¹*North Carolina A&T State University, Greensboro, North Carolina, United States*; ²*West Virginia University, Morgantown, West Virginia, United States*
- 10:30 AM 233 **Unlocking Probiotics Recovery in Poultry Feed Production**
Flavia P. Pela^{*1}, Marissol L. Cardoso¹, Rafael A. Penha-Filho² ¹*Polysell Productos Químicos Ltda, Louveira, Sao Paulo, Brazil*; ²*Safe Saude Animal, Jaboticabal, Sao Paulo, Brazil*
- 10:45 AM 234 **Litter amendments drive distinct compositional and functional shifts in the chicken gut microbiome**
Mitiku Seyoum^{*2}, Valentina Caputi¹, Kelsey Anderson¹, Karrie Daniels³, Mark Lyte³, Philip A. Moore¹, Joshua M. Lyte¹ ¹*USDA-ARS Poultry Production and Product Safety Research Unit, Fayetteville, Arkansas, United States*; ²*University of Arkansas, Fayetteville, Arkansas, United States*; ³*Iowa State University, Fayetteville, Arkansas, United States*
- 11:00 AM 235 **Investigation of Poultry Fecal Removal Efficiency and Volume Estimation on Grooved-Floor Panels**
Siya Chen², Yu Wang^{*1}, Ziyuan Zhao¹, Giri Athrey¹, Gregory Archer³, Ziteng Xu¹ ¹*Texas A&M University, Bryan, Texas, United States*; ²*Texas A&M University, College Station, Texas, United States*; ³*Texas A&M Agrilife Extension, College Station, Texas, United States*
- 11:15 AM 236 **Evaluating draft Environmental Protection Agency emissions models for broiler operations**
Guoming Li^{*1}, Richard Gates², Yijie Xiong³, Brett Ramirez², Robert Bruns⁴ ¹*University of Georgia, Athens, Georgia, United States*; ²*Iowa State University, Ames, Iowa, United States*; ³*University of Nebraska-Lincoln, Lincoln, Nebraska, United States*; ⁴*University of Tennessee, Knoxville, Tennessee, United States*
- 11:30 AM 237 **A method for successful autonomous navigation by a robot in broiler-breeder flocks**
Colin Usher^{*1}, YuHang He¹ ¹*Georgia Tech Research Institute, Atlanta, Georgia, United States*
- 11:45 AM 238 **Breeder age and egg storage temperature affect the eggshell translucency scores of Ross breeders**
Paola A. Amaya Hernandez¹, Edgar L. Molina Villarraga¹, Erick Shimura Kawaushi¹, Caleb M. Marshall¹, Cesar A. Guato Guaman¹, Duarte Neves², Edgar O. Oviedo-Rondon^{*1} ¹*North Carolina State University, Raleigh, North Carolina, United States*; ²*Zinpro Corporation, Eden Prairie, Minnesota, United States*

Metabolism and Nutrition: Feed Additives I

Moderator: Manuel da Costa, Cargill

Room 302A-302B (Abstact Session Room B)

- 10:00 AM 239 **Recent advances in probiotic research**
Rami A. Dalloul^{*1} ¹*University of Georgia, Athens, Georgia, United States*

- 10:30 AM 240 **The effects of yeast cell wall and probiotic (*Bacillus* spp.) combination products on growth performance and mortality of broiler chickens**
Lauren Nolan^{*3}, Brett Lumpkins¹, Gregory F. Mathis², Jose Soto³, Reed Dillard³, Dulmelis Sandu³, Roy Brister³, Curtis Novak³ ¹*Southern Poultry Research Inc., Athens, Georgia, United States*; ²*Southern Poultry Research, Inc., Athens, Georgia, United States*; ³*Alltech, Lexington, Kentucky, United States*
- 10:45 AM 241 **Next-Gen In Ovo Probiotic Programming: Computational Modeling Integrates Meta-Analysis, Monte Carlo Simulations, and Machine Learning**
Shaymaa Abousaad^{*1}, Ayman M. Abouzeid², Yongjie Wang¹, Peter R. Ferket³ ¹*North Carolina Agricultural and Technical State University, Greensboro, North Carolina, United States*; ²*North Carolina Agricultural and Technical State University, Greensboro, North Carolina, United States*; ³*North Carolina State University, Raleigh, North Carolina, United States*
- 11:00 AM 242 **Effect of dietary *Bacillus amyloliquefaciens* CECT 5940 supplementation on the performance and intestinal microbiota of laying hens during 25 - 41 weeks of age**
Zeyang Li^{*1}, Juliano Dorigam¹, James Wen², Hugo Ramirez² ¹*Evonik Operations GmbH, Hanau-Wolfgang, Germany*; ²*Evonik Corporation, Kennesaw, Georgia, United States*
- 11:15 AM 243 **Comparative Effects of Probiotics, Prebiotics, and Synbiotics on Growth Performance, Carcass Traits, Immune Function, and Gut Morphology of Turkeys**
Victoria A. Uyanga^{*1}, Aminu S. Sulaiman², Bakari A. Husaini³ ¹*Lincoln University of Missouri, Jefferson City, Missouri, Missouri, United States*; ²*Mewar University Gangrar, Chittorgarh, Raj., India*; ³*Bayero University, Kano, Nigeria*

Immunology, Health and Disease: Feed Additives I

Moderator: Daniel Adams, EnviroFlight

Room 302C (Abstact Session Room C)

- 10:00 AM 244 **Necrotic enteritis in chickens: Understanding immune responses to devise novel probiotic-based disease control strategy**
Raveendra Kulkarni^{*1}, Carissa Gaghan¹, Hosni Hassan¹, Oscar Fletcher¹ ¹*North Carolina State University, Raleigh, North Carolina, United States*
- 10:30 AM 245 **Efficacy of gut microbiota modulators from yeasts on performance of broilers chickens challenged with necrotic enteritis caused by *Eimeria* and *Clostridium* infection**
Mariel Neves Tavares^{*2}, Raquel T. Pereira², Elise Nacer-Khodja², Amrita Dhara¹, Maria A. Rodriguez², Maria Garcia², Jessica T. Bortoloto² ¹*AGRIVET Research & Advisory, West Bengal, India*; ²*Olmix SA, Brehan, France*
- 10:45 AM 246 **Calcium montmorillonite Calibrin®-Z binding capacity with beta lactamase in vitro**
San Ching^{*1}, Marc Herpfer¹, Aldo Rossi¹ ¹*Amlan International, Vernon Hills, Illinois, United States*

- 11:00 AM 247 **Precision biotic: an innovative solution for controlling *Salmonella* Infantis and improving performance in broiler chickens**
Diana Álvarez-Mira², Carlos Lozano-Poveda^{*1}, Luis Oicatá-Oicatá², Arlen Gómez², Claudia C. Martins¹, Cristiano Bortoluzzi¹, Ingrid P. Chioda¹, Christiane Matias³, Leticia Cardoso¹ ¹*dsm-firmenich, São Paulo, Sao Paulo, Brazil*; ²*Universidad Nacional de Colombia, Bogotá, Colombia*; ³*dsm-firmenich, Sao Paulo, Sao Paulo, Brazil*
- 11:15 AM 248 **Effects of dehulled hempseed extract on proliferation and glucose utilization of chicken macrophage-like cells**
Lizette Garcia^{*1}, Miriam Garcia¹ ¹*Alabama A&M University, Huntsville, Alabama, United States*
- 11:30 AM 249 **Effect of antibiotics in combination with postbiotics and essential oils on gut microbiome maturation in broiler chickens.**
Hsuan Chen¹, Anne Goderis¹, Garrett J. Mullenix^{*1}, Jean E. De Oliveira¹, Vivek A. Kuttappan¹, Yann Fournis¹ ¹*Cargill, Vilvoorde, Vlams-Brabant, Belgium*
- 11:45 AM 250 **Did Raised Without Antibiotics programs change field levels of Ionophore anticoccidial resistance**
Gregory F. Mathis^{*1}, Brett Lumpkins¹ ¹*Southern Poultry Feed & Research, Inc., Athens, Georgia, United States*

Symposium:

A new focus on fiber in poultry: Is it a nutrient or antinutrient?

Chair: Tara York, AB Vista

Ballroom B

- 1:00 PM **Welcome**
Tara York, *AB Vista*
- 1:10 PM 573S **Maximizing the benefits of fiber in poultry nutrition: insights and ingredient evaluation**
Caitlin Evans^{*1}, Tara York¹ ¹*AB Vista, Plantation, Florida, United States*
- 1:40 PM 574S **From pigs to poultry: the evolution of fiber in monogastric nutrition**
Amy Petry^{*1}, Natalie Morgan² ¹*University of Missouri, Columbia, Missouri, United States*; ²*Curtin University, Perth, Western Australia, Australia*
- 2:20 PM 575S **Fiber and the microbiome: what's all the hype?**
Tim Johnson^{*1} ¹*University of Minnesota, Kimball, Minnesota, United States*
- 3:00 PM **Break**
- 3:30 PM 576S **Intestinal Integrity and Key Biomarkers for Performance**
Michael Kogut^{*1} ¹*USDA-ARS, College Station, Texas, United States*
- 4:00 PM 577S **Fiber and performance: connecting the dots for optimal performance**
Carrie L. Walk^{*1} ¹*AB Vista, Marlborough, United Kingdom*
- 4:30 PM **Questions and answers**

Symposium: Genetic bases for resistance and immunity to avian diseases

Chairs: Ryan Arsenault, USDA-ARS
Rami A. Dalloul, University of Georgia
Robert L. Taylor, Jr., West Virginia University

Ballroom C

- 1:00 PM 578S **Why understanding the poultry enteric nervous system is critical to poultry health and production**
Valentina Caputi*¹ ¹USDA-ARS, Fayetteville, Arkansas, United States
- 1:30 PM 579S **What the kinome reveals about resistance to foodborne pathogens**
Ryan Arsenault*¹ ¹USDA ARS, College Station, Texas, United States
- 2:00 PM 580S **Functional perspectives of host-microbiome interactions in poultry production: Where we are and where we need to go**
Joshua M. Lyte*¹ ¹USDA-ARS Poultry Production and Product Safety Research Unit, Fayetteville, Arkansas, United States
- 2:30 PM 581S **Poultry Microbiota's Influence on Disease: A Breeder Perspective**
Travis Williams*¹ ¹Hy-Line International, Dallas Center, Iowa, United States
- 3:00 PM **Break**
- 3:30 PM 582S **Identifying chicken alloantigens to understand their influence on disease and production traits**
Robert L. Taylor*¹, Janet E. Fulton² ¹West Virginia University, Morgantown, West Virginia, United States; ²Hy-Line International Inc., Dallas Center, Iowa, United States
- 4:00 PM 583S **Host genetics associated with coccidiosis and necrotic enteritis**
Rami A. Dalloul*¹, Abhisek Niraula¹ ¹University of Georgia, Athens, Georgia, United States
- 4:30 PM 584S **Commercial breeding for disease resistance**
Jesus Arango*¹, Janet E. Fulton² ¹Cobb Vantress Inc., Siloam Springs, Arkansas, United States; ²Hy-Line International, Dallas Center, Iowa, United States

Microbiology and Food Safety II

Moderator: Walid Al Hakeem, USDA

Room 301A-301B (Abstact Session Room A)

- 1:00 PM 251 **Inhibitory effect of FloraMax B11® against *Salmonella* Minnesota and *Salmonella* Infantis**
João Vitor D. Costa*¹, Ana Carolina B. Benteo¹, Evelin L. Sano¹, Larissa Justino¹, Jurandir d. Junior¹, Fabrizio Matte², Carlos D. Mole², Alceu K. Hirata², Ana Angelita S. Baptista¹ ¹State University of Londrina, Londrina, PR, Brazil; ²Vetanco, Chapecó, Santa Catarina, Brazil

- 1:15 PM 252 **Microbial Ecology of Poultry Leg Quarters Treated with a Short-Duration Dip (15-s) of Sodium Acid Sulfate**
Dana K. Dittoe^{*1}, Mack P. Myer¹, Cindy B. Austin², Elena G. Olson², Christina Oval³, Ashley A. Tarcin², Steven C. Ricke² ¹*University of Wyoming, Laramie, Wyoming, United States*; ²*University of Wisconsin, Madison, Wisconsin, United States*; ³*Jones-Hamilton Co., Walbridge, Ohio, United States*
- 1:30 PM 253 **SENS-D: A Convergent Innovation Model for Rapid *Salmonella* Detection and Supply Chain Intelligence**
Amit Morey^{*1}, Mahmoud Almasri⁴, Kate Trout⁵, Haitao Li⁶, Tatijana M. Fisher², Hoang Hoa³ ¹*Auburn University, Auburn, Alabama, United States*; ²*Lincoln University of Missouri, Jefferson City, Missouri, United States*; ³*University of Missouri, Columbia, Missouri, United States*; ⁴*University of Missouri, Columbia, Missouri, United States*; ⁵*University of Missouri, Columbia, Missouri, United States*; ⁶*University of Missouri St. Louis, St. Louis, Missouri, United States*
- 1:45 PM 254 **Evaluating *In Vitro* Models for Assessing the Effects of Amendments on Poultry Litter Microbial Composition**
Elena G. Olson^{*1}, Max Peckenshneider¹, Brett Hale², Carson Priddle², Steven C. Ricke³ ¹*UW-Madison, Madison, Wisconsin, United States*; ²*AgriGro, Doniphan, Missouri, United States*; ³*University of Wisconsin, Madison, Wisconsin, United States*
- 2:00 PM 255 **Evaluating Natural Darkling Beetle and *Salmonella* Control Products**
Charles L. Hofacre^{*1}, Matthew K. Jones², Jennie Baxter¹, Lanny Weaver³, Earnie Porta³, Neil Trevean³, Roy Berghaus⁴ ¹*Southern Poultry Research Group, Inc., Watkinsville, Georgia, United States*; ²*Southern Poultry Research Group, Watkinsville, Georgia, United States*; ³*Arkion Life Sciences, New Castle, Delaware, United States*; ⁴*University of Georgia, Athens, Georgia, United States*
- 2:15 PM 256 **Persistence and Translocation of a *Salmonella*-Specific Bacteriophage from Eggshell Exterior to Interior Surface Under Hatching Conditions in the Absence of *Salmonella***
Elena G. Olson^{*1}, Emily Matiak¹, Megan McCutchen¹, Colin Wallrich¹, James Corban², Vatsan Raman², Steven C. Ricke³ ¹*UW-Madison, Madison, Wisconsin, United States*; ²*University of Wisconsin-Madison, Madison, Wisconsin, United States*; ³*University of Wisconsin, Madison, Wisconsin, United States*
- 2:30 PM 257 **Effects of a commercial triple-strain *Bacillus*-based probiotic on cecal colonization with *Salmonella enteritidis* in commercial pullets at the onset of pre-lay period**
Meghan Schwartz^{*1}, Antoine Meuter¹, George Girgis², Hannah McBride² ¹*Novonesis, Louisburg, North Carolina, United States*; ²*Nevysta, Ames, Iowa, United States*
- 2:45 PM 258 **The Effect of Oregano Essential Oil on Lactobacilli Bacteria**
Alexandra Desbruslais^{*1}, Ellie Burroughs¹, Heidi Hall¹, Laura Corbett¹ ¹*Anpario, Worksop, Notts, United Kingdom*
- 3:00 PM **Break**
- 3:30 PM 259 **Phage cocktail delivered in water significantly reduced *Salmonella* colonisation in broiler chickens**
Anisha M. Thanki^{*1}, Steve Hooton¹, Natasha Whenham², Mike Bedford³, Tom Dale³, Helen V Masey O'Neill², Martha Clokie¹ ¹*University of Leicester, Leicester, United Kingdom*; ²*Ab Agri, Peterborough, United Kingdom*; ³*Ab Vista, SN8 4AN, Marlborough, United Kingdom*

- 3:45 PM 260 **Cecal microbiota profile and cecal digesta concentration of short chain fatty acids in pullets fed yeast bioactives and omega-3 fatty acid under different spacing allowance**
Paul K. WALIAULA*^{1,2}, Xianhua Yin², Elijah G. Kiarie³, Moussa S. Diarra² ¹*University of Guelph, Guelph, Ontario, Canada*; ²*Guelph Research and Development Center, Agriculture and Agri-Food Canada, Guelph, GUELPH, Ontario, Canada*; ³*University of Guelph, Guelph, Ontario, Canada*
- 4:00 PM 261 **Omics-based studies indicate that *Bacillus velezensis* can be an alternative for *Salmonella* Heidelberg control and intestinal health improvement in broilers**
Patrícia G. Hoepers¹, Pedro L. Nunes¹, Hebreia O. Almeida², Rodrigo D. Carvalho³, Flávia F. Aburjaile³, Victor A. Penha⁴, Mario M. Martins², Vasco Azevedo^{5,3}, Belchiorina Beatriz Fonseca*¹ ¹*Universidade Federal de Uberlândia, Uberlândia, MG, Brazil*; ²*Universidade Federal de Uberlândia, Uberlândia, MG, Brazil*; ³*Universidade Federal de Minas Gerais, Belo Horizonte, Brazil*; ⁴*University of Helsinki, Helsinki, Finland*; ⁵*Universidade Federal da Bahia, Salvador, Brazil*
- 4:15 PM 262 **Probiotics treatment reduces *Salmonella* shedding in broiler chickens**
Mohammadali Alizadehsadrddaneshpour*¹, Ali Tolooezarrin¹, Katherine Blake¹, Shayan Sharif¹ ¹*University of Guelph, Guelph, Ontario, Canada*
- 4:30 PM 263 **Effects of virginiamycin and sanguinarine-based growth promoters on the gut microbial structure of broiler chicks challenged with *Salmonella* Enteritidis**
Maria Leticia R. Gomes¹, Laioyane A. Lima¹, Alan Douglas L. Rocha¹, Sintia Naianne P. Feitoza¹, Renália S. Militão¹, Francisco F. Caetano Filho¹, Daniel Farias M. Monte², Patrícia Emília N. Givisiez¹, Mateus Lacerda P. Lemos¹, Celso Oliveira*¹ ¹*Universidade Federal da Paraíba, Areia, PB, Brazil*; ²*North Carolina State University, Raleigh, North Carolina, United States*
- 4:45 PM 264 **Effect of deoxynivalenol and an algae-clay detoxifier on intestinal morphology, and liver oxidative stress in broiler chickens**
Raquel T. Pereira*¹, Marie Gallissot¹, Maria A. Rodriguez¹, Regiane Santos² ¹*Olmix SA, Brehan, France*; ²*Schothorst Feed Research, Lelystad, Netherlands*

Metabolism and Nutrition: Feed Additives II

Moderator: Candice Blue, Probiotech International Inc.

Room 302A-302B(Abstact Session Room B)

- 1:00 PM 265 **Performance and ileum microbiota of broilers fed with symbiotic**
Douglas E. Faria*¹, Daniel E. Faria Filho¹, Vicenti B. Klein¹, Beatriz F. Tassoni¹, Fernando A. Silveira² ¹*Faculdade de Zootecnia e Engenharia de Alimentos (FZEA) - University of Sao Paulo (USP), Pirassununga, Sao Paulo, Brazil*; ²*EKOA Life Sciences, Brasília, Distrito Federal, Brazil*
- 1:15 PM 266 **Evaluation of symbiotic for commercial laying hens: Performance and internal and external quality of eggs**
Douglas E. Faria*¹, Daniel E. Faria Filho¹, Vicenti B. Klein¹, Beatriz F. Tassoni¹, Fernando A. Silveira¹ ¹*Faculdade de Zootecnia e Engenharia de Alimentos (FZEA) - University of Sao Paulo (USP), Pirassununga, Sao Paulo, Brazil*

- 1:30 PM 267 **Optimising the inclusion of xylooligosaccharides: effects on performance, nutrient digestibility, intestinal morphology, and litter properties in growing broiler chickens**
Muhammad Naeem^{*1}, Faisal Shahzad², Naeem Tahir³, Dianna Bourassa⁴ ¹*Auburn University, Auburn, Alabama, United States*; ²*Islamia University of Bahawalpur, Bahawalpur, Pakistan*; ³*Jadeed Group of Companies, Rawalpindi, Pakistan*; ⁴*Auburn University, Auburn, Alabama, United States*
- 1:45 PM 268 **Effect of a stimbiotic feed additive on cecal fermentation in broiler chickens: An ex vivo simulation approach**
Teemu Rinttilä¹, Juha Apajalahti¹, Wolfgang H. Schwarz², Läufer Albrecht^{*2} ¹*Alimetrix Research Ltd., Espoo, Finland*; ²*Aspratis GmbH, Munich, Germany*
- 2:00 PM 269 **Standardized Natural Citrus Extract to improve gut health and growth performance.**
Sekhou Cisse¹², Arkadiusz Matuszewski³, Hoa Bui¹², Amine Benarbia^{*12} ¹*Nor-Feed SAS, Angers, Maine et Loire, France*; ²*Joint Lab ANR FeedInTech, Beaucouzé, Maine et Loire, France*; ³*Institute of Animal Sciences, Warsaw University of Life Sciences, Warsaw, Poland*
- 2:15 PM 270 **Effect of a novel phytogetic feed additive (Fytera Perform) on broiler uniformity.**
Karlinton R. Flores^{*1}, Eric Heskett², Marcos Rostagno¹ ¹*Selko-USA, Indianapolis, Indiana, United States*; ²*Case Farms, Troutman, North Carolina, United States*
- 2:30 PM 271 **Effects of plant-derived Isoquinoline Alkaloids on Broiler Performance and Welfare Parameters**
Cleverson D. Souza¹, Dimitri M. Freitas², Krzysztof Lipinski³, Julia Schmitt², Jose O. Sorbara^{*4} ¹*Phytobiotics, Londrina, Parana, Brazil*; ²*Phytobiotics, Londrina, Brazil*; ³*University of Warmia and Mazury, Olsztyn, Poland*; ⁴*University of Georgia, Athens, Georgia, United States*
- 2:45 PM 272 **Effects of Sanguinarine like alkaloids on Immune Response of Broiler Chickens**
Cleverson D. Souza¹, Dimitri M. Freitas¹, Sergio L. Vieira^{*1}, Raquel Ponsati² ¹*Phytobiotics, Londrina, Parana, Brazil*; ²*Federal University of Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil*
- 3:00 PM **Break**
- 3:30 PM 273 **Oregano-Derived Essential Oils: Effects on Egg Production and Eggshell Quality in Laying Hens**
Ishab Poudel^{*1}, M D. Cabrera², Rafael A. Cabrera², Santiago Sasia², Rebecca Wysocky³, Kenneth E. Anderson⁴ ¹*North Carolina State University, Raleigh, North Carolina, United States*; ²*NUTRINAE LLC, Palo Alto, California, United States*; ³*Minor Outlying Islands*; ⁴*NC State University, Raleigh, North Carolina, United States*
- 3:45 PM 274 **OLIVE-SOLUBLE (OS): A sustainable added-value stream from extra-virgin Olive Oil production, rich in polyphenols, targeting the needs of modern chicken-broiler production**
Alireza Khadem^{*12}, Zoi Skaperda³, Fotios Tekos⁴, Don Ritter¹, Demetrios Kouretas⁵, Christos Gougoulis¹ ¹*Innovad group, Berchem, Belgium*; ²*Ghent University, Ghent, Belgium*; ³*Olea Fortius PC, Larissa, Greece*; ⁴*FoodOxys PC Spin-off, Larissa, Greece*; ⁵*University of Thessaly, Larissa, Greece*

- 4:00 PM 275 **Cannabidiol and nano-selenium mediate intestinal barrier function by affecting mucosal microstructures in the gut of chickens infected with *C. perfringens***
Pawel Konieczka*^{1,3}, Natalia Szyrnska², Misza Kinsner³, Dominika Szkopek³ ¹*University of Warmia and Mazury in Olsztyn, Olsztyn, Poland;* ²*University of Warmia and Mazury, Olsztyn, Poland;* ³*The Kielanowski Institute of Animal Physiology and Nutrition, Polish Academy of Sciences, Jablonna, Poland*
- 4:15 PM 276 **Impact on the performance of broiler breeders supplemented with cinnamaldehyde and thymol**
Carolina Haubert Franceschi*¹, Patricia Calixto Pereira¹, Mauricio S. Cunha¹, Eduardo Trevisol¹, Eduardo Butolo², Marcelo Rezende², Leovan Nunes², Alessandro Mereu¹ ¹*Danisco Animal Nutrition & Health, São Paulo, Brazil;* ²*Pole Alimentos, Uberlândia, Brazil*
- 4:30 PM 277 **Potential significance of *Corchorus capsularis* on Turkey Meat Oxidative Stability, Meat Composition, and Performance**
Farhana Sharmin*¹ *Bangladesh Jute Research Institute, Dhaka, Bangladesh*
- 4:45 PM 278 **Enhancing Broiler Chicken Growth, Immunological Response, and Intestinal Morphology through Organic Copper Supplementation Combined with Synbiotics**
Mohsen Afsharmanesh*¹ ¹*Department of Animal Science, Faculty of Agriculture, Shahid Bahonar University of Kerman, Kerman, Iran, Kerman, Kerman, Iran (the Islamic Republic of)*

Immunology, Health and Disease: Feed Additives II

Moderator: Daniel Adams, EnviroFlight

Room 302C (Abstact Session Room C)

- 1:00 PM 279 **In-vitro inhibition of *Enterococcus* strains isolated from commercial broilers by a three-strain *Bacillus* Direct-Fed Microbial product (DFM)**
Elizabeth J. Kim*¹, Joshua Walker¹, Nicholas Chubbs¹, Tim Hunter¹, Shruti Bedarkar¹, Sofia Bialkowski¹, Weiqing Zeng¹ ¹*IFF, Wilmington, Delaware, United States*
- 1:15 PM 280 **Difference in saponin-based formulations in maintaining broilers' zootechnical performances under experimental condition**
Hoa Bui*¹, Amine Benarbia¹, Claire Maltret¹ ¹*Nor-Feed SAS, Angers, Maine et Loire, France*
- 1:30 PM 281 **Effect of dietary inclusion of grape pomace on physiological and molecular marker of gut health and oxidative stress in coccidia-challenged broilers (*Gallus gallus*)**
Milan K. Sharma*¹, Eliot M. Dugan¹, Melissa Huang¹, Cydney D. Jackson¹, Matthew J. Pataki¹, Peter R. Gracey¹, Chloe J. McGovern¹, Elad Tako¹ ¹*Cornell University, Ithaca, New York, United States*
- 1:45 PM 282 **Evaluation of a new combination of postbiotics and essential oils on broilers raised under various coccidiosis control programs with a mild *Enterococcus* challenge**
Manuel Da Costa*¹, Maci Oelschlager¹, Bradley Turner² ¹*Cargill Animal Nutrition, Wayzata, Minnesota, United States;* ²*Poultry Research Partners, LLC, Bogart, Georgia, United States*

- 2:00 PM 283 **Precision biotics in laying hens: a key solution for reducing *Salmonella* Enteritidis excretion and improving food safety**
Diana Álvarez-Mira², Ingrid P. Chioda³, Arlen Gómez², Luis Oicatá-Oicatá², Claudia C. Martins³, Carlos A. Lozano-Poveda¹, Cristiano Bortoluzzi^{*1}, Christiane Matias⁴, Marcia Nishizawa³ ¹DSM Nutritional Products, Bogotá, Bogotá DE, Colombia; ²Universidad Nacional de Colombia, Bogotá, Brazil; ³dsm-firmenich, Sao Paulo, Sao Paulo, Brazil; ⁴dsm-firmenich, Sao Paulo, Sao Paulo, Brazil
- 2:15 PM 284 **A precision biotic enhances the growth performance of broilers fed nutritionally reduced diets**
Cristiano Bortoluzzi^{*1}, Maria Aparecida Iuspa¹ ¹dsm-firmenich, College Station, Texas, United States
- 2:30 PM 285 **Effect of alternative pronutrients on liver health: a model of macroscopic evaluation and its correlation with histopathological findings**
Alejandra Ruiz Real^{*1} ¹Universidad Nacional de Colombia, Bogotá, Colombia
- 2:45 PM 286 **Treatment of chickens with probiotics under conditions conducive to necrotic enteritis development**
Mohammadali Alizadehsadrdaneshpour^{*4}, Charlotte Fletcher³, Samson Oladokun¹, Khaled Abdelaziz², Shayan Sharif⁴ ¹TAMU, College Station, Texas, United States; ²Clemson University, Clemson, South Carolina, United States; ³McMaster University, Hamilton, Ontario, Canada; ⁴Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada
- 3:00 PM **Break**
- 3:30 PM 287 **1,25-dihydroxyvitamin D₃ Supplementation Modulates Tigh Junction Permeability and Humoral Immunity Against Bacterial Chondronecrosis with Osteomyelitis Lameness in Broiler Chickens**
Andi Asnayanti^{*1}, Abdulaziz Alqahtani¹, Khawla Alharbi², Ruvindu Perera³, Anh Do⁴, Kennedy Hicks⁸, Wesley J. Vaughn⁴, Alexa Thomas⁴, Abigail Lecomte⁴, Kathrin Bühler⁶, Jan Dirk van der Klis⁶, Adnan Alrubaye⁷ ¹University of Arkansas, Fayetteville, Arkansas, United States; ²University of Arkansas, Fayetteville, Arkansas, United States; ³University of Arkansas, Fayetteville, Arkansas, United States; ⁴University of Arkansas, Fayetteville, Arkansas, United States; ⁵University of Arkansas, Fayetteville, Arkansas, United States; ⁶Herbonis Animal Health GmbH, Augst BL, Switzerland; ⁷University of Arkansas, Fayetteville, Arkansas, United States; ⁸University of Arkansas, Fayetteville, Arkansas, United States
- 3:45 PM 288 **Use of a *Quillaja saponaria* and aluminosilicate blend, Excential Sapphire Q, in vaccinated broilers during a strong enteric challenge**
Matthew K. Jones^{*1}, Charles L. Hofacre¹, Madri Brink² ¹Southern Poultry Research Group, Inc., Watkinsville, Georgia, United States; ²Orffa Additives B.V., Breda, Netherlands
- 4:00 PM 289 **Characterizing the state of the gut microbiota of chicks in commercial settings**
Erez Mills^{*1}, Binita Poudel¹, Ron Tovy-Sharon¹ ¹Hebrew University of Jerusalem, Rehovot, Israel

Metabolism and Nutrition: Vitamins and Minerals I

Moderator: Pratima Adhikari, Mississippi State University

Room 303 (Abstact Session Room D)

- 1:00 PM 290 **Recent advances in mineral nutrition and trends in their supplementation for productivity, health, and sustainability.**
Colwayne Morris*¹ *Zinpro Corporation, Conyers, Georgia, United States*
- 1:30 PM 291 **Comparing the efficacy of different organic zinc sources on growth performance of broiler chickens**
Raquel T. Pereira*², Anne Cecile Jutten², Maria A. Rodriguez², Luiz Fernando Teixeira Albino¹, Horacio Santiago Rostagno¹ *¹Universidade Federal de Viçosa UFV, Viçosa, Brazil; ²Olmix SA, Brehan, France*
- 1:45 PM 292 **Estimating dietary vitamin E needs of broilers**
Michael Kidd*¹, Kenneth B. Nelson¹, Savannah Wells¹, Virginia G. Slick¹, Hunter Walters² *¹University of Arkansas, Fayetteville, Arkansas, United States; ²Tyson Foods, Springdale, Arkansas, United States*
- 2:00 PM 293 **Different dietary sources and inclusion levels of copper modify microbiome profile, explaining performance differences**
Gabriela Cardoso Dal Pont*², Austin Silva¹, Melanie Roux², Hugo Romero-Sanchez², Rasha Qudsieh², Laura M. Payling³ *¹Texas A&M, College Station, Texas, United States; ²Novus International, Wake Forest, North Carolina, United States; ³Biofractal, Loule, Portugal*
- 2:15 PM 294 **Evaluation of a digestible calcium and phosphorous system formulated with different limestones and phytase matrix values on performance and bone mineralization**
Kyle Venter*^{1,2}, Roselina Angel³, Christine Jansen Van Resnburg¹, Jamie L. Fourie², Peter plumstead² *¹University of Pretoria, Pretoria, South Africa; ²Neuro Livestock Research, Lanseria, South Africa; ³University of Maryland, College Park, Maryland, United States*
- 2:30 PM 295 **The effects of zinc source and dose in diets supplemented with a high dose of phytase on performance and mineral excretion in broilers to 37 days of age**
Jamie L. Fourie^{1,2}, Kyle Venter^{3,2}, Christine Jansen Van Resnburg², Cibeles A. Torres⁴, Peter plumstead*¹ *¹Neuro Livestock Research, Lanseria, South Africa; ²University of Pretoria, Pretoria, Gauteng, South Africa; ³NLR, Lanseria, South Africa; ⁴Zinpro, Madrid, Spain*
- 2:45 PM 296 **Evaluation of different trace mineral sources in commercial egg production**
Luigi A. Moreira*¹, Ezequiel Rosales², Karolina V. Augusto³, Benjamin Fuente Martinez⁴ *¹Selko Feed Additive, Amersfoort, Utrecht, Netherlands; ²CIANA, TEPATITLÁN DE MORELOS, Jalisco, Mexico; ³TROUW NUTRITION, Amersfoort, Utrecht, Netherlands; ⁴UNAM, Ciudad de México, México, Mexico*

Metabolism and Nutrition: General Nutrition I

Moderator: Chongxiao Chen, University of Georgia

Room 305A-305B (Abstact Session Room E)

- 1:00 PM 297 **Utilizing a dynamic nutrient system for precision poultry nutrition and performance optimization**
Elisangela A. Guaiume*¹ ¹*Cargill Animal Nutrition, Wayzata, Minnesota, United States*
- 1:30 PM 298 **Use of powder or granulated calcium carbonate in the diet of starter chicks on the growth performance and tibia characteristics**
María de Lourdes d. Angeles¹, Sergio Gomez-Rosales*¹ ¹*INIFAP, Queretaro, Mexico*
- 1:45 PM 299 **Effects of the level of calcium of the pre-lay diet on egg production and egg quality of white laying hens from 17 to 38 weeks of age**
Juan Valle^{1,2}, Sara Benítez¹, Nereida Luna Corrales¹, Guillermo Talegón¹, Gonzalo González Mateos*¹ ¹*UPM, Madrid, Spain; 2Lohmann Breeders GmbH, Cuxhaven, Germany*
- 2:00 PM 300 **Effect of DL-methionine and Methionine hydroxy analogue on the performance and gut health of aflatoxin-exposed broilers**
Cecile Gayraud*¹, Catherine Fudge², Revathi Shanmugasundaram³, Todd J. Applegate⁴, Chen Chongxiao⁵, Laharika Kappari⁶ ¹*Evonik Nutrition & Care GmbH, Animal Nutrition, Hanau, Germany; 2University of Georgia, Athens, Georgia, United States; 3USDA, ARS, Athens, Georgia, United States; 4University of Georgia, Athens, Georgia, United States; 5University of Georgia, Athens, Georgia, United States; 6University of Georgia, Athens, Georgia, United States*
- 2:15 PM 301 **Evaluating choline sources: Impact on broiler performance and leg health in a choline deficiency model**
Flavio Longo*¹, Jundi Liu¹, Ross Wolfenden¹, Sergio L. Vieira², André Favero², Daniele Escrobot³ ¹*Eastman Animal Nutrition, Kingsport, Tennessee, United States; 2Santa Livia Research Farm, Garibaldi, Rio Grande do Sul, Brazil; 3IMPEXTRACO, Curitiba, PR, Brazil*
- 2:30 PM 302 **Effect of dietary fat sources on performance, carcass yield and intestinal histomorphometry of broiler chickens**
Shijinaraj Manjankattil Rajan*¹, Jinquan Wang¹, Sabin Poudel¹, Karla Valeria Casco Gomez¹, Muhammad Naeem¹, Olivia Lockyear², Samuel Rochell¹, Dianna Bourassa¹ ¹*Auburn University, Auburn, Alabama, United States; 2Auburn University, Auburn, Alabama, United States*
- 2:45 PM 303 **Can combined dietary strategies and photoperiod management affect meat quality and the occurrence of breast muscle myopathies?**
Jonathan Dayan*¹, Francesca Soglia¹, Marco Zampiga¹, Emilia L. Antenucci¹, Martina Bordini¹, Massimiliano Petracchi¹, Federico Sirri¹
¹*University of Bologna, Ozzano dell'Emilia, Italy*
- 3:00 PM **Break**
- 3:30 PM 304 **Productive Energy Caloric Values of Protein and Fat in Soybean Meal, Corn, and Diets for Broilers**
Diego Martinez*¹, Craig Coon¹ ¹*University of Arkansas, Fayetteville, Arkansas, United States*

- 3:45 PM 305 **Influence of the origin of the soybeans on the chemical composition and protein quality indicators of soybean meals arriving to European ports**
Mateo Lucio¹, Guillermo Talegón¹, Sara Benítez¹, Lewis Aguirre², Gonzalo González Mateos^{*1} ¹UPM, Madrid, Spain; ²Trouw Nutrition R&D Poultry Research Centre, Casarrubios del Monte, Spain
- 4:00 PM 306 **Influence of the use of tannins on the performance, egg quality and intestinal morphometry of layers**
Vinício d. Cardoso^{*1}, Leticia A. Silva¹, Tatiana C. Santos², Vittor t. Zancanela³, Simara M. Marcato¹ ¹State University of Maringá, Maringá, Paraná, Brazil; ²State University of Maringá, Maringá, Brazil; ³Federal University of Sergipe, Nossa Senhora da Glória, Sergipe, Brazil
- 4:15 PM 307 **Chemical composition, nutritional value, and physiological effects of alkaline hydrolyzed feather meal in Japanese quail**
Asghar Sedaghat^{*1,2}, Ata Alaei², Mohamad A. Torshizi² ¹University of Georgia, Athens, Georgia, United States; ²Tarbiat Modares University, Tehran, Tehran, Iran (the Islamic Republic of)
- 4:30 PM 308 **Effects of different dietary forage sources and quantitative feed restriction on carcass traits and meat quality attributes of native Bangladeshi geese.**
Umme S. Ety^{*2}, Md Sazedul K. Sarker², Farhana Sharmin¹, Halima Khatun², Nushrat N. Lisa², Aminul Islam², Sakib S. Zihan² ¹Bangladesh Jute Research Institute, Dhaka, Bangladesh; ²Bangladesh Livestock Research Institute, Savar, Dhaka, Bangladesh, Dhaka, Dhaka, Bangladesh
- 4:45 PM 309 **Nutritional Characteristics of Peanut Skin and Potentials In Animal Feed Formulation**
Johnson A. Olupona^{*1}, Olubukola Lawrence-Azua¹ ¹Federal College of Animal Health and Production Technology Ibadan, Ibadan, Oyo, Nigeria

Management and Production II

Moderator: Rosie Whittle, University of Arkansas

Room 306A (Abstact Session Room F)

- 1:00 PM 310 **Effects of breeder genetic line and age on specific gravity and translucency**
Paola A. Amaya Hernandez¹, Edgar L. Molina Villarraga¹, Erick Shimura Kawaushi^{*1}, Caleb M. Marshall¹, Cesar Guato Guaman¹, Duarte Neves², Edgar O. Oviedo-Rondon¹ ¹North Carolina State University, Raleigh, North Carolina, United States; ²Zinpro Corporation, Eden Prairie, Minnesota, United States
- 1:15 PM 311 **Starting low and ending high with breeder males**
Rick A. van Emous^{*1}, Annemarie Mens² ¹Wageningen Livestock Research, Wageningen, Netherlands; ²Wageningen Livestock Research, Wageningen University and Research, Wageningen, Netherlands
- 1:30 PM 312 **Dietary tryptophan supplementation to mitigate the effects of heat stress on slow growing male broilers raised on pasture**
Jennifer Timmons^{*1}, Celia Whyte¹, Unishma Ghimire¹, Shawna Weimer², Jaelen M. Cherry³, Samuel Mwangi⁴ ¹University of Maryland Eastern Shore, Princess Anne, Maryland, United States; ²University of Arkansas, Fayetteville, Arkansas, United States; ³University of Arkansas, Fayetteville, Arkansas, United States; ⁴North Carolina State University, Raleigh, North Carolina, United States
- 1:45 PM 313 **Feed and water access during transportation positively impacts thermoregulation and stress levels in broiler chicks**
Xujie Li^{*1}, Bruce M. Rathgeber¹, Stephanie Collins¹ ¹Dalhousie University, Truro, Nova Scotia, Canada

- 2:00 PM 314 **Mitigating airborne dust in cage-free laying hen facilities: Assessing ionizer performance**
Felipe Rodrigues-Picchi¹, Brett Ramirez*¹ ¹*Iowa State University, Ames, Iowa, United States*
- 2:15 PM 315 **Assessing the detrimental effects of chronic heat stress in commercial layers in cage-free system**
Bikash Aryal*¹, Shuja Majeed¹, Bikas R. Shah¹, Nimra Khalid¹, Lisa R. Bielke², Qihong Wang¹³, Lingying Zhao⁴, Ali Nazmi¹⁵ ¹*Ohio State University, Wooster, Ohio, United States*; ²*North Carolina State University, Raleigh, North Carolina, United States*; ³*Ohio State University, Columbus, Ohio, United States*; ⁴*Ohio State University, Columbus, Ohio, United States*; ⁵*Ohio State University, Columbus, Ohio, United States*

Immunology, Health and Disease: Immunology

Moderator: Mohamad Mortada, ADM Animal Nutrition

Room 306B-306C (Abstact Session Room G)

- 1:00 PM 316 **Insights for Designing Future Vaccines in Poultry**
Ramesh Selvaraj*¹, Revathi Shanmugasundaram² ¹*University of Georgia, Athens, Georgia, United States*; ²*USDA, ARS, Athens, Georgia, United States*
- 1:30 PM 317 **Lymphocyte populations in the liver and secondary lymphoid organs of White Leghorn and UCD200/206 Scleroderma/Systemic sclerosis-expressing chickens differ after vaccination with *Salmonella* Typhimurium bacterin**
Chrysta N. Beck*¹, Jossie M. Santamaria¹, Gisela F. Erf¹ ¹*University of Arkansas, Fayetteville, Arkansas, United States*
- 1:45 PM 318 **The effects of primary and secondary immunizations with a *Histomonas meleagridis* cathepsin protease recombinant protein in different vehicles on local and systemic immune responses in turkeys**
Jossie M. Santamaria*¹, Chrysta N. Beck¹, Aaron Forga¹, Kasey A. Matusik¹, Diego Cortes¹, Melissa Martinez¹, James Higuaita¹, Karen Echevarria¹, Zhicheng Dou², Gisela F. Erf¹, Danielle Graham¹
¹*University of Arkansas, Fayetteville, Arkansas, United States*;
²*Clemson University, Clemson, South Carolina, United States*
- 2:00 PM 319 **Further observaton confirm the phagocytic capacity of avian erythrocytes-chickens and turkeys**
Paul Cotter*¹ ¹*Framingham State University, Arlington, Massachusetts, United States*
- 2:15 PM 320 **Immune profile and immunometabolic recovery of adult inbred poultry genetic lines in response to intramuscular lipopolysaccharide challenge**
Kayla Elmore¹, Susan J. Lamont¹, Elizabeth Bobeck*¹ ¹*Iowa State University, Ames, Iowa, United States*
- 2:30 PM 321 **Gene expression analysis of newly identified chicken 1 α -hydroxylase (CYP27B1) in the lymphoid system**
Marina Kohn², Emöke Szöcs⁴, Nándor Nagy⁴, Kathrin Bühler*¹, Jan Dirk van der Klis¹, Daniel Elleder³, Bernd Kaspers² ¹*Herbonis Animal Health GmbH, Augst BL, Switzerland*; ²*Veterinary Faculty, University of Munich, Munich, Germany*; ³*Czech Academy of Sciences, Prague, Czechia*; ⁴*Faculty of Medicine, Semmelweis University, Budapest, Hungary*

- 2:45 PM 322 **Nature versus nurture: can genetic selection overcome environmental differences to achieve consistent results between experiments?**
Shelly Nolin*¹, Christopher Ashwell³, Frank Edens¹, Christa Honaker², Robert L. Taylor³, Paul Siegel² ¹*NC State University, Raleigh, North Carolina, United States*; ²*Virginia Polytechnic Institute and State University, Blacksburg, Virginia, United States*; ³*West Virginia University, Morgantown, West Virginia, United States*

Animal Well-Being & Behavior

Moderator: Prafulla Regmi, University of Georgia

Room 306A (Abstact Session Room F)

- 3:30 PM 323 **A study of the behavioural output differences in turkeys vs broilers response to photoperiod.**
Karen Schwan-Lardner*¹ ¹*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*
- 4:00 PM 324 **Differences in feeder usage and feeding behaviors by broiler chicks with supplemental and standard feeders**
Anusha Gautam*¹, Jeremiah D. Davis², Joseph Purswell³, Martha S. Rueda¹, Bethany Baker-Cook¹ ¹*Auburn University, Auburn, Alabama, United States*; ²*Auburn University, Auburn, Alabama, United States*; ³*USDA Agricultural Research Service, Mississippi, Mississippi, United States*
- 4:15 PM 325 **Behavioral strategies of broilers during early life thermal conditioning and subsequent heat stress**
Rosie Whittle*^{1,6}, Tom Porter², Aaron Forga³, Danielle Graham⁴, Shawna Weimer^{5,6} ¹*University of Arkansas, Fayetteville, Arkansas, United States*; ²*University of Maryland, College Park, Maryland, United States*; ³*University of Arkansas, Fayetteville, Arkansas, United States*; ⁴*University of Arkansas, Fayetteville, Arkansas, United States*; ⁵*University of Arkansas, Fayetteville, Arkansas, United States*; ⁶*University of Arkansas, Fayetteville, Arkansas, United States*
- 4:30 PM 326 **Dietary Olive Oil influences the profile of metabolites crossing the blood-brain barrier in Broiler Chicks**
Odinaka Iwuozo*¹, Nathanael I. Lichti², Bruce Cooper², Yewande Fasina¹ ¹*North Carolina A&T State University, Greensboro, North Carolina, United States*; ²*Bindley Bioscience Center, Purdue University, West Lafayette, Indiana, United States*

Thursday, July 17

SYMPOSIA AND ORAL SESSIONS

PSA Industry Research Forum: A conversation with our stakeholders

Moderator: Tom E. Porter, University of Maryland

Ballroom B

- 8:00 AM **Welcome**
Tom E. Porter, *University of Maryland*
- 8:05 AM 327 **Broiler Industry: Research needs and opportunities**
Ashley Peterson*¹ ¹*National Chicken Council, Washington, District of Columbia, United States*
- 8:25 AM 328 **Turkey Industry: Research needs and opportunities**
Lindy Chiaia*¹ ¹*National Turkey Federation, Washington, District of Columbia, United States*
- 8:45 AM 329 **Egg Industry: Research needs and opportunities**
Oscar Garrison*¹ ¹*United Egg Producers, Johns Creek, Georgia, United States*
- 9:05 AM 330 **USPOULTRY Update: Partnership and funding opportunities**
Denise Heard*¹ ¹*USPOULTRY, Tucker, Georgia, United States*
- 9:25 AM **Questions and answers**

Student Workshop: Where can poultry science take you? Career pathways, preparation tips, and profile-building strategies

Chairs: Muhammad Ali, University of Georgia
Pravin Mishra, University of Hawaii

Ballroom C

- 9:30 AM **PSA Hatchery Business Meeting**
Muhammad Ali, *University of Georgia*
- 10:00 AM **Break**
- 10:20 AM **Introduction to Workshop**
Muhammad Ali, *University of Georgia*
- 10:25 AM 585S **What it takes: Building a career as a poultry nutritionist in an integrated or consulting company**
J. T. Pope*¹ ¹*House of Raeford, Mebane, North Carolina, United States*

- 10:40 AM 586S **Climb, Swing, Leap: Embracing the jungle gym career path with a curious mindset**
Kayla Price*¹ ¹*Alltech, Guelph, Ontario, Canada*
- 10:55 AM 587S **From grad student to faculty: A field guide to academic survival**
Chongxiao Chen*¹ ¹*University of Georgia, Athens, Georgia, United States*
- 11:10 AM 588S **Technical services or marketing careers in poultry: Insights from an industry leader**
Milan Hruby*¹ ¹*ADM, Chicago, Illinois, United States*
- 11:25 AM 589S **Roles and opportunities for poultry science students at the USDA**
Deana R. Jones*¹ ¹*USDA Agricultural Research Service, Athens, Georgia, United States*
- 11:40 AM 590S **From the corporate to the entrepreneurial world**
Federico Etcheverry*¹ ¹*Anpro Marcom, Jacksonville, Florida, United States*
- 11:55 AM **Questions and answers**

Metabolism and Nutrition: Amino Acids

Moderator: Roshan Adhikari, CJ Bio America Inc

Room 301A-301B (Abstact Session Room A)

- 9:00 AM 331 **Moving forward with dietary amino acid research in broilers**
Michael Kidd*¹ ¹*University of Arkansas, Fayetteville, Arkansas, United States*
- 9:30 AM 332 **Evaluating the effects of increasing digestible arginine to lysine ratio levels on the growth performance of Ross 708 x YPM male broilers during the finisher and withdrawal phases.**
Corey A. Johnson*¹, Logan S. Erb¹, Tanner Wise¹, Anthony Quant¹, Elizabeth Miller¹, Nickki S. Tillman² ¹*Kalmbach Nutritional Services, Upper Sandusky, Ohio, United States*; ²*Nutritional Statistics LLC, Buford, Georgia, United States*
- 9:45 AM 333 **Effects of variable digestible arginine to digestible lysine ratios on the growth performance of male Ross 708 x YPM broiler chickens through 42 days of age**
Logan S. Erb*¹, Corey A. Johnson¹, Anthony Quant¹, Tanner Wise², Elizabeth Miller¹, Nickki S. Tillman³ ¹*Kalmbach feeds, Upper Sandusky, Ohio, United States*; ²*Kalmbach feeds, Upper Sandusky, Ohio, United States*; ³*Nutritional Statistics LLC, Buford, Georgia, United States*
- 10:00 AM **Break**
- 10:30 AM 334 **Dietary arginine silicate inositol complex (Nitrogisine®) supplementation supports egg quality and bone metabolism during later laying phases in hens**
Michael Carroll*¹, Victoria A. Uyanga¹, Kayla Elmore¹, Elizabeth Bobeck¹ ¹*Iowa State University, Ames, Iowa, United States*
- 10:45 AM 335 **The response of broiler performance to chestnut tannins is dependent on the dietary amino acid density**
William Lambert*¹, Maeva Durand¹, Clarisse Techer², André Mayer³
¹*Mixscience, Bruz, France*; ²*Mixscience, Rennes, France*; ³*Salus, Santo Antonio de Posse, Brazil*
- 11:00 AM 336 **Effect of methionine source and levels on nitrogen utilization in growing broilers**
Francis Amann Eugenio¹, Tahir Mahmood¹, Yves Mercier*¹ ¹*Adisseo France S.A.S., Saint Fons, France*

- 11:15 AM 337 **Effects of Methionine Sources on Performance and Productivity in Broiler Breeders**
Fernanda Castro*³, Corey Wishon², Dannica Wall², Adam Fahrenholz², Victor Naranjo¹, Lynn Worley-Davis⁴, Allison Pullin⁴ ¹*Evonik Guatemala, S.A, Guatemala City, Guatemala*; ²*North Carolina State University, Raleigh, North Carolina, United States*; ³*Evonik Corporation, Kennesaw, Georgia, United States*; ⁴*North Carolina State University, Raleigh, North Carolina, United States*
- 11:30 AM 338 **Fasting heat production and metabolic responses of L-citrulline-fed broiler chickens subjected to acute heat stress conditions**
Victoria A. Uyanga*²¹, Li Lan¹, Jingpeng Zhao¹, Xiaojuan Wang¹, Hongchao Jiao¹, Dr. H. Lin¹ ¹*Shandong Agricultural University, Tai'an, China*; ²*Lincoln University of Missouri, Jefferson City, Missouri, Missouri, United States*

Metabolism and Nutrition: Feed Additives III

Moderator: Cristiano Bortoluzzi, dsm-firmenich

Room 302A-302B (Abstact Session Room B)

- 8:00 AM 339 **Precision biotics: an effective strategy to enhance performance and egg quality in commercial laying hens raised in a cage-free system**
Ingrid P. Chioda¹, Leticia Cardoso¹, Claudia C. Martins¹, Cristiano Bortoluzzi*¹, Marcia Nishizawa¹, Valdir Robeiro³, Carlos Lozano-Poveda² ¹*dsm-firmenich, São Paulo, São Paulo, Brazil*; ²*dsm-firmenich, São Paulo, São Paulo, Brazil*; ³*Federal University of Sergipe, São Cristóvão, Sergipe, Brazil*
- 8:15 AM 340 **A Silymarin-Based Formulation Promotes Broiler Performance: Antioxidant Mechanisms as Key Drivers Supported by Integrated Field and Mechanistic Insights**
Carol Ponce de Leon¹, Carolina Guillermo*², Viviana San Martín², Diego Martinez³ ¹*Independent researcher, Fayetteville, Arkansas, United States*; ²*CKM S.A.C., Lima, Peru*; ³*University of Arkansas, Fayetteville, Arkansas, United States*
- 8:30 AM 341 **Liver Health Dynamics, Amino Acid Metabolism, and Growth Kinetics of Commercial Broilers Under a Hepatic Challenge and Fed a Silymarin-Based Formulation**
Carol Ponce de Leon¹, Viviana San Martín*², Carolina Guillermo², Diego Martinez³ ¹*Independent researcher, Fayetteville, Arkansas, United States*; ²*CKM S.A.C., Lima, Peru*; ³*University of Arkansas, Fayetteville, Arkansas, United States*
- 8:45 AM 342 **Effects of Plantago ovata seed supplementation on performance, egg quality, and immune response in laying Japanese quail**
Asghar Sedaghat*¹², Mohamad A. Torshizi² ¹*University of Georgia, Athens, Georgia, United States*; ²*Tarbiat Modares University, Tehran, Tehran, Iran (the Islamic Republic of)*
- 9:00 AM 343 **Meta-analysis of a protected organic acid blend effect on growth performance of broiler chickens**
Fenglan (Frances) Yan*¹, Eric Myers¹, Zhanna Hernandez¹ ¹*Novus International Inc., Chesterfield, Missouri, United States*
- 9:15 AM 344 **Evaluation of guanidinoacetic acid supplementation on broiler performance at different dietary energy levels and feeding phases**
Zeyang Li*¹, Juliano Dorigam¹, Lukas Bauer¹, Vincent Hess¹ ¹*Evonik Operations GmbH, Hanau-Wolfgang, Germany*

- 9:30 AM 345 **Isoacids in broiler diets: effects on performance**
Lucio F. Araujo^{*1}, Cristiane S. Araujo², Ivânio J. Bueno³, Lucas Rodrigues³, Giovana Longhini¹, Raimundo Ferreira Neto¹, Melany Lovón¹, Mario Lopes¹, Vitor Pais¹, Alba Fireman³ ¹University of Sao Paulo, Pirassununga, SP, Brazil; ²University of Sao Paulo, Pirassununga, Sao Paulo, Brazil; ³Zinpro, Eden Prairie, Minnesota, United States
- 9:45 AM 346 **Effect of organic acids and mannan oligosaccharides on production parameters and egg quality of laying hens**
Jimena A. Yepes¹, Lina M. Penuela Sierra^{*1}, Jose J. Yanquen Velasquez¹, Bruno E. Vecchi²³, Juan E. Ibarra³², Diego F. Aldana³², Jeinson A. Almanza¹, Cristian Páez¹, Paola Leyton¹, Harold Corrales¹
¹University of Tolima, Ibagué, Tolima, Colombia; ²Vetanco S.A., Buenos Aires, Argentina; ³Vetanco Colombia SAS, Bogotá, Colombia
- 10:00 AM **Break**
- 10:30 AM 347 **The use of NanoSIMS and Synchrotron techniques to explain eggshell resistance in aged layers**
Iris Valido²³, Maria Angels Subirana², Alessandra Rigo Monteiro^{*1}, Stephane Faucher⁴, Pascale Senechal⁴, Peter Moonen⁵⁴, Sandra Mounicou², Dirk Schaumlöeffel² ¹Animine Precision Minerals, Annecy, Haute Savoie, France; ²Université de Pau et des Pays de l'Adour, E2S UPPA, CNRS, IPREM, Pau, France; ³GTS Research Group, Universitat Autònoma de Barcelona, , Barcelona, Spain; ⁴Université de Pau et des Pays de l'Adour, E2S UPPA, CNRS, DMEX, Pau, France; ⁵Université de Pau et des Pays de l'Adour, E2S UPPA, CNRS, Total, LFCR, Pau, France, Pau, France
- 10:45 AM 348 **Fermented Feed Modulates Growth Performance and Intestinal Health in Broiler Chickens Challenged with Necrotic Enteritis**
Ahmed Kewan^{*21}, Doyun Goo¹, Woo K. Kim¹ ¹University of Georgia, Athens, Georgia, United States; ²Al-Azhar University, Nasr City, Cairo, Egypt
- 11:00 AM 349 **Effects of Commercial Mycotoxin Deactivator on Performance, Gut and Organ Morphometry, and Liver Color in Broiler Chickens Fed Diets Contaminated with Fumonisin and Deoxynivalenol.**
Froylan Abraham S. Rodriguez^{*12}, Sergio Alvarez², Barbara Dupovec², Barbara Novak², Carlos Lopez Coello¹, Ernesto Avila¹, Jose Arce³ ¹UNAM, Tlajomulco, Jalisco, Mexico; ²dsm-firmenich, Guadalajara, Mexico; ³Universidad Michoacana, Morelia, Mexico
- 11:15 AM 350 **Effect and prediction of carbohydrase enzyme supplementation on growth performance of broilers**
Pierre Cozannet^{*1}, Rob Shirley², Haitham Yakout¹ ¹Adisseo, Saint Fons, Auvergne, France; ²Adisseo, Alpharetta, Georgia, United States
- 11:30 AM 351 **Efficacy of phytase supplementation on growth performance, protein efficiency ratio and pre-cecal phosphorus digestibility in broilers**
Maamer Jlali², Faegheh Zaefarian¹, Rob Shirley³, Pierre Cozannet^{*1}, Sarper Ozbek¹ ¹Adisseo, Saint Fons, Auvergne, France; ²Adisseo France SAS, Malicorne, France; ³Adisseo, Alpharetta, Georgia, United States
- 11:45 AM 352 **Evaluation of the effects of bile acids and emulsifier on the digestibility of crude protein and ether extract in broilers**
BRUNO G. AMORIM^{*1}, Antonio Gilberto Bertechini², Dehao He³, Bernardo R. nogueira², Livia G. Ferreira⁴ ¹MCASSAB, Belo Horizonte, Minas Gerais, Brazil; ²Federal University of Lavras, Lavras, Brazil; ³Lachance, Jinan, China; ⁴UNIBH, Belo Horizonte, Brazil

Immunology, Health and Disease: Health and Disease

Moderator: Ali Nazmi, Ohio State University

Room 302C (Abstact Session Room C)

- 8:00 AM 353 **Gastrointestinal functioning in poultry in health and disease: roles of neuropeptides, hormones and immune modulators**
Colin Scanes^{*1}, Krystyna Pierzchala-Koziec² ¹University of Wisconsin Milwaukee, Urbandale, Iowa, United States; ²University of Agriculture Krakow, Krakow, Poland
- 8:30 AM 354 **In silico design, optimization and evaluation of a multi-epitope vaccine targeting Clostridium perfringens collagen adhesin protein (CNA)**
Shailes Bhattra¹³, Dhiraj Chundru², Madhusudan Timilsina², Mostafa Ghanem², Hyun Lillehoj¹, Zhifeng Sun¹, Charles Li^{*1} ¹Beltsville Agricultural Research Center, Beltsville, Maryland, United States; ²University of Maryland, College Park, Maryland, United States; ³ORISE, Beltsville, Maryland, United States
- 8:45 AM 355 **Phytogetic supplementation modulates the ileal and cecal microbiota supporting gut health during a necrotic enteritis challenge**
Abhisek Niraula^{*1}, Candice E. Blue², Ashley L. Wagner², Bertrand MEDINA², Ivan D. Girard², Ali Calik³, Rami A. Dalloul¹ ¹University of Georgia, Athens, Georgia, United States; ²Probiotech International Inc., Saint-Hyacinthe, Quebec, Canada; ³Ankara University, Ankara, Turkey
- 9:00 AM 356 **Prembion: A Breakthrough Precision Biotic for Poultry Gut Health and Stressor Defense**
Georgios Savoglidis^{*1} ¹Embion Technologies, Etoy, Switzerland
- 9:15 AM 357 **Develop Long-Term Avian Airway Organoids for Avian Influenza Virus Research**
Yuhua Z. Farnell^{*1}, Paula Chen², Zeyu Liu³, Yuxiang Sun³, Morgan Farnell¹ ¹Texas A&M University, College Station, Texas, United States; ²USDA-ARS, Columbia, Missouri, United States; ³Texas A&M University, College Station, Texas, United States
- 9:30 AM 358 **Comparative evaluation of probiotic potential of Lactobacillus isolates from healthy and colibacillosis-affected broilers against avian pathogenic Escherichia coli challenge**
Nimra Khalid^{*12}, Syed M. Bukhari², Hafiz M. Abdullah¹, Ali Nazmi¹³ ¹Ohio State University, Wooster, Ohio, United States; ²University of Veterinary & Animal Sciences, Lahore, Punjab, Pakistan; ³Ohio State University, Columbus, Ohio, United States
- 9:45 AM 359 **Salmonella Heidelberg-induced dysbiosis in broiler chickens: A microbiota disruption perspective**
Mariana Q. Nascimento^{*1}, Marcos Nascimento², Rafaela Hilgemberg¹, Adriana Figueiredo³, Daniel N. Morais¹ ¹Sapiens, Jundiaí, São Paulo, Brazil; ²NutriFides, Jacareí, Brazil; ³Aleris Animal Nutrition, Jundiaí, Brazil
- 10:00 AM **Break**
- 10:30 AM 360 **Impact of selected pharmacological and nutritional interventions on Histomonas meleagridis transmission in turkey poults**
Jesus A. Maguey-Gonzalez¹, Andressa S. Stein¹, Raul Rosalino¹, Roberto Senas¹, Ileana Loeza¹, Danielle Graham¹, Billy M. Hargis¹, Juan D. Latorre^{*1} ¹University of Arkansas, Fayetteville, Arkansas, United States

- 10:45 AM 361 **What do we truly know about the lifecycle of *Histomonas meleagridis***
Steve H. Fitz-Coy*¹ *Merck, Salisbury, Maryland, United States*
- 11:00 AM 362 **Thrombocyte behavior in Mareks challenged, vaccinated, and control chickens of ADOL Lines 6.3 and 7.2**
Paul Cotter*¹ *Framingham State University, Arlington, Massachusetts, United States*
- 11:15 AM 363 **Avian reovirus clusters isolated in broilers with suggestive clinical symptoms in Brazil in 2024**
Vinicius B. de Faria², Isabela S. Torretta*¹, Camila Costa², Lucas F. Batista²⁴, Belchiolina Beatriz Fonseca³ *Federal University of Uberlandia, Uberlândia, Minas Gerais, Brazil*; ²*INATA Biológicos, Uberlandia, Brazil*; ³*Universidade Federal de Uberlandia, Uberlandia, MG, Brazil*; ⁴*Federal University of Uberlandia, Uberlandia, Brazil*
- 11:30 AM 364 **Separating Chicken's Head and Leg in Thermal Images via Object Detection and Machine Learning Models to Predict Avian Influenza and Newcastle Disease**
Alireza Ansarimovahed², Ahmad Banakar², Guoming Li*¹, Seyed M. Javidan² *University of Georgia, Athens, Georgia, United States*; ²*Tarbiat Modares University, Tehran, Iran (the Islamic Republic of)*

Metabolism and Nutrition: Vitamins and Minerals II

Moderator: Ishab Poudel, North Carolina State University

Room 303 (Abstact Session Room D)

- 8:00 AM 365 **Effect of Organic Trace Minerals Vs. Zinc Sulfate on performance, carcass yield, and tibia zinc content of broilers raised in floor pens.**
Mohamad Mortada*¹, Andrea Hanson¹, Jose Charal¹, Daniel Jones¹, Matthew Deeker¹, Kelsey Frank¹, Sierra Kolan¹, Rachel Proctor¹, Taylor Thoele¹, Safat Shueb¹, Dawn Buscheck¹, Jason Hickman¹, Catherine Ionescu² *ADM Animal Nutrition, Decatur, Illinois, United States*; ²*ADM International Sarl, Rolle, Vaud, Switzerland*
- 8:15 AM 366 **Evaluation of digestible calcium requirements of Ross 308 broilers by meta-analysis, with a specific focus on the interaction between phosphorus and calcium response**
Julie Bourdon¹, Simon Fontaine¹, Marie-Pierre Létourneau-Montminy², Agnes Narcy³, William Lambert*¹, Maeva Durand¹ *Mixscience, Bruz, France*; ²*Laval University, Québec City, Quebec, Canada*; ³*INRAE, Nouzilly, France*
- 8:30 AM 367 **Comparison of defatted and non-defatted methods for determining bone ash, calcium, and phosphorus in broiler tibias**
Claudia C. Martins¹, Ingryd P. Chioda¹, Leticia Cardoso¹, Carlos A. Lozano-Poveda², Larissa P. Melo³, Jovanir Fernandes³, Marcia Nishizawa*⁴ *dsm-firmenich, Sao Paulo, Sao Paulo, Brazil*; ²*DSM Nutritional Products, Bogotá, Bogotá DE, Colombia*; ³*Universidade Federal do Paraná Campus Palotina, Palotina, Paraná, Brazil*; ⁴*dsm-firmenich, Sao Paulo, Sao Paulo, Brazil*
- 8:45 AM 368 **Calcium:phosphorus ratio and calcium levels: impacts on performance and bone health in broiler chickens**
Ingryd P. Chioda¹, Claudia C. Martins¹, Leticia Cardoso¹, Keysuke Muramatsu², Carlos Lozano-Poveda², Marcia Nishizawa*¹ *dsm-firmenich, São Paulo, São Paulo, Brazil*; ²*dsm-firmenich, São Paulo, São Paulo, Brazil*

- 9:00 AM 369 **Evaluation of a quick and easy to use application of 25-hydroxyvitamin D₃ on vitamin D status, growth performance and bone characteristics of broiler chickens**
Estefania Perez Calvo¹, Jonathon Howard², Christina Gruber², Pauline Jenn³, Bertrand Guy¹, Chloe Modugno³, Carlos Lozano-Poveda^{*1}
¹*dsm-firmenich ANH, Kaiseraugst, Switzerland*; ²*dsm-firmenich ANH R&D Center, Tulln, Austria*; ³*dsm-firmenich ANH Research Center of Animal Nutrition and Health, Village Neuf, France*
- 9:15 AM 370 **Impact of different levels of vitamin d₃ in the diet on serum levels of 25-hydroxy-vitamin d₃ in long-term laying hens**
Ingryd P. Chioda¹, Leticia Cardoso¹, Claudia C. Martins¹, Carlos Lozano-Poveda^{*2} ¹*dsm-firmenich, São Paulo, São Paulo, Brazil*; ²*dsm-firmenich, São Paulo, São Paulo, Brazil*
- 9:30 AM 371 **1,25-Dihydroxyvitamin Glycosides from Plant Origin (*Solanum glaucophyllum*) in Diets for 76-Week-Old Laying Hens**
Ricardo V. Nunes^{*1}, Rosemar F. Saggin², Nilton Rohloff Junior², Cinthia Eyng³, Paulo C. Pozza⁴, Daiana S. Gust², Dariane A. Knaul², Matheus L. Maia², Marlene Schmidt⁵, Kathrin Bühler⁶, Katia Pedrosa⁵ ¹*Western Paraná State University, Marechal Cândido Rondon, PR, Brazil*; ²*Western Paraná State University, Marechal Cândido Rondon, PR, Brazil*, Francisco Beltrão, Paraná, Brazil; ³*Western Paraná State University, Marechal Cândido Rondon, Paraná, Brazil*; ⁴*Maringa State University, Maringá, Brazil*; ⁵*Innovad Group, Antuérpia, Belgium*; ⁶*Herbonis Animal Health GmbH, Augst BL, Switzerland*
- 9:45 AM 372 **Calcium requirements in growing Japanese quail: Growth, bone health, and immune function**
Mehran Mehri^{*1}, Mahmoud Ghazaghi¹, Farzad Bagherzadeh-Kasmani¹, Mohammad Rokouei¹ ¹*University of Zabol, Zabol, Iran (the Islamic Republic of)*

Metabolism and Nutrition: General Nutrition II

Moderator: Fernanda Castro, Evonik Corporation

Room 305A-305B (Abstact Session Room E)

- 8:00 AM 373 **Interaction effect of feeding mycotoxin-contaminated corn fines diet and heat stress on liver cytokines and jejunal nutrient transporter gene expression in broilers**
Sunday Adedokun^{*1}, Revathi Shanmugasundaram², Ramesh Selvaraj³, Michael Ford¹, Jacqueline Jacob¹ ¹*University of Kentucky, Lexington, Kentucky, United States*; ²*USDA ARS, Athens, GA, Athens, Georgia, United States*; ³*University of Georgia, Athens, Georgia, United States*
- 8:15 AM 374 **Characterization of the oxidative balance function of intestinal tissue during coccidiosis infection in chickens through a novel transcriptomics data analysis**
Luis F. Romero^{*1}, Laura M. Payling¹, Krutik Patel¹, Maria C. Walsh¹
¹*BIOFRACTAL, Loule, Portugal*
- 8:30 AM 375 **Energy Density of Diets Formulated with Productive Energy: Linear and Quadratic Effects on Improved Broiler Performance, Processing Yield, and Economics**
Diego Martinez^{*1}, Cole A. Umberson¹, Ehsan Sheikhsamani¹, Sarah E. Johnson¹, Craig Coon¹ ¹*University of Arkansas, Fayetteville, Arkansas, United States*

- 8:45 AM 376 **Higher Amino Acid Intakes Associated with Diets Formulated with Productive Energy Boost Protein Accretion, Weight Gain, and Processing Yield in Broilers**
Diego Martinez*¹, Cole A. Umberson¹, Ehsan Sheikhsamani¹, Craig Coon¹ ¹*University of Arkansas, Fayetteville, Arkansas, United States*
- 9:00 AM 377 **Cluster-based analysis of DDGS nutrient and antinutrient variability for improved precision**
Caleb M. Marshall*¹, Virginie Blanvillain², Edgar O. Oviedo-Rondon¹
¹*North Carolina State University, Raleigh, North Carolina, United States*; ²*AB Vista, Plantation, Florida, United States*
- 9:15 AM 378 **Evaluation of Two Energy Systems Currently Available for Broiler: Performance and Economic Responses**
Matheus Reis*¹, Rosa Franco-Roselló², Ana Isabel García-Ruiz²
¹*Nutreco, Toledo, Toledo, Spain*; ²*Trouw Nutrition, Casarubios Del Monte, Toledo, Spain*
- 9:30 AM 379 **Effect of slaughter age on carcass characteristics, meat quality and texture profile of turkey meat**
Nushrat N. Lisa*¹, Md Sazedul K. Sarker¹, Shakila Faruque¹, Md. Abdur Rashid¹, Farhana Sharmin², Umme S. Ety¹, Aminul Islam¹, Sadman S. Zihan¹ ¹*Bangladesh Livestock Research Institute, Savar, Dhaka, Bangladesh*; ²*Bangladesh Jute Research Institute, Dhaka, Bangladesh*

Physiology and Reproduction

Moderator: Charlene Hanlon, Auburn University

Room 306A (Abstact Session Room F)

- 8:00 AM 380 **Metformin as a potential therapeutic for improving ovarian function in Broiler Breeder hens**
Evelyn A. Weaver*¹, Ramesh Ramachandran¹ ¹*Pennsylvania State University, Boalsburg, Pennsylvania, United States*
- 8:30 AM 381 **Early defense and immune shifts during symptom progression in the vagina of turkey hens infected with low pathogenicity influenza A virus**
Sunantha Kosonsiriluk*¹, Pitchaya Santativongchai¹, Kent Reed², Marissa Studniski³, Ben Wileman³, Kahina Boukherroub¹ ¹*University of Minnesota, Saint Paul, Minnesota, United States*; ²*University of Minnesota, St Paul, Minnesota, United States*; ³*Select Genetics, Willmar, Minnesota, United States*
- 8:45 AM 382 **The effect of genetic selection on gene expression in the developing neuroendocrine system of broiler chickens**
Panpradub Sinpru*¹, Kristen Diehl², Laura E. Ellestad³, Tom Porter¹
¹*University of Maryland, College Park, Maryland, United States*; ²*USDA, Beltsville, Maryland, United States*; ³*University of Georgia, Athens, Georgia, United States*
- 9:00 AM 383 **Neurochemical metabolic pathways display region and age-specific expression patterns in the chicken intestinal tract**
Samiru S. Wickramasuriya*¹, Valentina Caputi¹, Joshua M. Lyte¹
¹*USDA-ARS Poultry Production and Product Safety Research Unit, Fayetteville, Arkansas, United States*
- 9:15 AM 384 **Effect of early-life thermal conditioning on mRNA expression in tissues during heat stress in broiler chickens**
Boonyarit Kamkrathok*¹, Scott Klug¹, Ronique C. Beckford¹, Tom Porter¹ ¹*University of Maryland, College Park, Maryland, United States*

- 9:30 AM 385 **Responses to insulin-like growth factor and growth hormone may be influenced through thyroid hormone-driven changes to levels of binding proteins and receptors in avian muscle cells**
Brett Marshall*¹, Aquinas Voss¹, Laura E. Ellestad¹ ¹*University of Georgia, Athens, Georgia, United States*
- 9:45 AM 386 **Protein co-expression network analysis to investigate biological mechanisms associated with fillet weight in broilers affected by myopathies**
Martina Bordini*¹, Francesca Soglia¹, Massimiliano Petracci¹, Shai Barbut² ¹*Alma Mater Studiorum University of Bologna, Cesena, Italy;*
²*University of Guelph, Guelph, Ontario, Canada*
- 10:00 AM **Break**
- 10:30 AM 387 **Comparative Analysis of Two Dietary Saturated Fat Types On Metabolite Profiles Crossing The Blood Brain Barrier of Poultry Chicks**
Oluteru Orimaye*¹, Nathanael I. Lichti², Bruce Cooper², Yewande Fasina¹ ¹*North Carolina A&T State University, Greensboro, North Carolina, United States;* ²*Bindley Bioscience Center, Purdue University, West Lafayette, Indiana, United States*
- 10:45 AM 388 **Body composition at onset of lay - Effects of growth trajectory and photostimulation on relative body fat in laying hen pullets**
Ana K. Rentsch^{1,2}, Regina Halm¹, Alexander Chattoe¹, Charlene Hanlon³, Grégoy Y. Bédécarrats*¹ ¹*University of Guelph, Guelph, Ontario, Canada;* ²*University of Guelph, Guelph, Ontario, Canada;*
³*Auburn University, Auburn, Alabama, United States*
- 11:00 AM 389 **Keel bone ossification and position change during puberty – An exploratory study**
Ana K. Rentsch^{1,2}, Charlene Hanlon³, Grégoy Y. Bédécarrats*¹
¹*University of Guelph, Guelph, Ontario, Canada;* ²*University of Guelph, Guelph, Ontario, Canada;* ³*Auburn University, Auburn, Alabama, United States*
- 11:15 AM 390 **Extreme acute heat stress: effects on rectal temperature and gut morphology of broilers**
Vaishali Gupta*^{1,2}, Yun-Ji Hwang^{1,2}, Meg A. Delmonte^{2,1}, Yang-Ho Choi^{1,2,3} ¹*Gyeongsang National University, Jinju-si, Korea (the Republic of);* ²*Gyeongsang National University, Jinju-si, Gyeongsangnam-do, Korea (the Republic of);* ³*Gyeongsang National University, Jinju-si, Gyeongsangnam-do, Korea (the Republic of)*

Processing and Products

Moderator: Tomi Obe, University of Arkansas

Room 306B-306C (Abstact Session Room G)

- 9:00 AM 391 **Sustainable Poultry Industry 4.0: The Next Level Technological Approach for the Poultry Processing Sector**
Amit Morey^{*1} ¹Auburn University, Auburn, Alabama, United States
- 9:30 AM 392 **Determination of brown egg fertility by multi-directional visible/near-infrared spectroscopy and machine learning**
Seyyede Arefeh Hosseini², Ahmad Banakar², Saeid Minaei², Saman Abdanan Mehdizadeh³, Mohamad A. Torshizi², Guoming Li^{*1}
¹University of Georgia, Athens, Georgia, United States; ²Tarbiat Modares University, Tehran, Iran (the Islamic Republic of); ³Agricultural Sciences and Natural Resources University of Khuzestan, Khuzestan, Iran (the Islamic Republic of)
- 9:45 AM 393 **Comparative Impact of Electrical and Controlled Atmosphere Stunning on Chicken Carcass Microbiota: A 16S rRNA Sequencing Analysis**
Yagya Adhikari^{*1}, Shijinaraj Manjankattil Rajan¹, Dianna Bourassa¹
¹Auburn University, Auburn, Alabama, United States
- 10:00 AM **Break**
- 10:30 AM 394 **Effects of controlled atmosphere stunning and packaging on the quality and spoilage of raw breast fillets stored under refrigeration**
Jaroslav Valenta¹, Chinelo S. Onah-Kachiside^{*1}, Laura J. Garner², Telah Black², Sofia S. Melendrez², Vianca Maite¹, Amit Morey² ¹Auburn University, Auburn, Alabama, United States; ²Auburn University, Auburn, Alabama, United States
- 10:45 AM 395 **Impact of egg handling and storage temperature on egg quality of shell eggs after extended storage of 27 weeks.**
Javier S. Garcia^{*1}, Richard K. Gast¹, Quentin Read³, Deana R. Jones²
¹USDA-ARS, Athens, Georgia, United States; ²USDA Agricultural Research Service, Athens, Georgia, United States; ³USDA-ARS, Athens, Georgia, United States
- 11:00 AM 396 **Pea protein coating: A strategy to preserve internal egg quality and extend shell life**
Ana Beatriz S. Oliveira^{*1}, Livia Maria da Silva², Mateus T. Menegalle², Julia Barros¹, José Fernando Menten², Felipe Dilelis² ¹Ingredion, Jundiaí, São Paulo, Brazil; ²University of São Paulo (USP), Luiz de Queiroz College of Agriculture, Piracicaba, São Paulo, Brazil
- 11:15 AM 397 **Cracking the data: Exploring differences in statistical approaches to yolk score analysis**
Jared Trask¹, Sara Cloft^{*1}, Evan Rocheford³, Torbert Rocheford⁴³, Darrin M. Karcher² ¹Purdue University, West Lafayette, Indiana, United States; ²Purdue University, West Lafayette, Indiana, United States;
³Nutramaze, West Lafayette, Indiana, United States; ⁴Purdue University, West Lafayette, Indiana, United States
- 11:30 AM 398 **Egg quality of brown layer hens of two ages raised in a floor system in aviaries**
Júlia Nunes¹, Manuela B. Netto^{*1}, Ádrea Milhomens de Oliveira¹, Elizabeth Batista Martins¹, Kalebe de Oliveira Maia¹, Maria Eduarda Amorim Borges¹, Walisson de Oliveira Carvalho¹, Fernanda Alves Duarte¹, Laura Alves Duarte¹, Renata Rodrigues Gomes¹, Emmanuel Arnhold¹, Jose Henrique Stringhini¹ ¹Universidade Federal de Goiás, Goiânia, GO, Brazil

Presidential Symposium: Precision poultry farming

Chairs: Martin J. Zuidhof, University of Alberta
Douglas F. Britton, Georgia Tech Research Institute

Ballroom B

1:00 PM		Introduction Martin J. Zuidhof, <i>University of Alberta</i> & Douglas F. Britton, <i>Georgia Tech Research Institute</i>
1:05 PM	591S	Precision poultry farming: A purposeful endeavour Tomas Norton* ¹ ¹ <i>KU Leuven, Leuven, Belgium</i>
1:45 PM	592S	Real-time monitoring and management of broiler health and welfare Guoming Li* ^{1,2} ¹ <i>University of Georgia, Athens, Georgia, United States;</i> ² <i>University of Georgia, Athens, Georgia, United States</i>
2:10 PM	593S	Smart poultry systems: Commercializable insights from a sensor-equipped poultry house Michael Kidd* ¹ , Ngan Lee ² ¹ <i>University of Arkansas, Fayetteville, Arkansas, United States;</i> ² <i>University of Arkansas, Fayetteville, Arkansas, United States</i>
2:35 PM	594S	What will a smart poultry farm look like? Alex V. Samoylov* ¹ ¹ <i>Georgia Tech, Atlanta, Georgia, United States</i>
3:00 PM		Break
3:30 PM	595S	Precision feeding to reduce environmental impact of poultry production Thiago L. Noetzold* ¹ ¹ <i>University of Alberta, Edmonton, Alberta, Canada</i>
4:00 PM	596S	A poultry value proposition: Precision feeding to eliminate spiking of broiler breeder roosters Martin J. Zuidhof* ¹ ¹ <i>University of Alberta, Edmonton, Alberta, Canada</i>
4:30 PM		Roundtable discussion

Monday AM Poster Session

Ballroom A

- 9:30 AM 399P **Monitoring the Utilization of Ramps by Laying Hens in Cage-Free Environment with Deep Learning**
Bidur Paneru*¹, Anjan Dhungana¹, Samin Dahal¹, Lilong Chai²
¹University of Georgia, Athens, Georgia, United States; ²University of Georgia, Athens, Georgia, United States
- 9:30 AM 400P **Leveraging AI-driven sentiment analysis and natural language processing to inform extension efforts in the poultry industry**
Ryan Mitchell*¹, Jonathan Moyle², Sunoh Che³ ¹University of Maryland, College Park, Maryland, United States; ²University of Maryland, Salisbury, Maryland, United States; ³University of Maryland, College Park, Maryland, United States
- 9:30 AM 401P **Elucidate missing CHIR genes on Line-P chickens in previous transcriptomic study using long-read sequencing**
Shelby Ferrier*², Theros T. Ng², Brandi A. Sparling¹ ¹Western University, Upland, California, United States; ²Western University of Health Sciences, Pomona, California, United States
- 9:30 AM 402P **Novel computed tomography (CT) – derived traits in purebred turkeys (Meleagris gallopavo)**
Seyedehbaran Amini*¹, Bayode O. Makanjuloo², Dan Tulpan², Xuechun Bai³, Ryley Vanderhout³, Shai Barbut⁴, Alexandra Harlander⁵, Filippo Miglior⁷, Jennifer L. Ellis⁶, Emily M. Leishman⁸, Christine F. Baes², Ricarda E. Jahnel² ¹University of Guelph, Guelph, Ontario, Canada; ²University of Guelph, Guelph, Ontario, Canada; ³Hendrix Genetics, Kitchener, Ontario, Canada; ⁴University of Guelph, Guelph, Ontario, Canada; ⁵University of Guelph, Guelph, Ontario, Canada; ⁶University of Guelph, Guelph, Ontario, Canada; ⁷Lactanet, Guelph, Ontario, Canada; ⁸Aarhus University, Tjele, Denmark
- 9:30 AM 403P **Effects of *in ovo* docosahexaenoic acid supplementation on liver and ileum gene expression profiles in broiler chicken embryo**
Bal Krishna Pandey*¹, Pravin Mishra¹, Suresh Burlakoti¹, Sachi Katsumata¹², Birendra Mishra¹, Rajesh Jha¹ ¹University of Hawaii at Manoa, Honolulu, Hawaii, United States; ²Okayama University, Okayama, Okayama, Japan
- 9:30 AM 404P **The effect of blue or white LED lighting, compared to darkness, during simulated chick transport on the welfare and productivity of broilers**
Deliah McGregor*¹, Trevor Crowe², Tory Shynkaruk¹, Carolin Adler¹, Karen Schwean-Lardner¹ ¹University of Saskatchewan, Saskatoon, Saskatchewan, Canada; ²University of Saskatchewan, Saskatoon, Saskatchewan, Canada
- 9:30 AM 405P **Characterizing Non-Infectious Brooder Mortality: Age of Onset and Patterns in Commercial Turkey Flocks**
Phoebe Flaskey*¹, Dawn Koltes¹ ¹Iowa State University, Ames, Iowa, United States
- 9:30 AM 406P **Growth Performance and Heat Stress in Broiler Birds Reared in an Environmentally Controlled House and on Pasture**
Biswajit Kumar Biswas*¹, Faija S. Pory², Naudia Clark², Md Raihanul Hoque², Samuel N. Nahashon¹, Pramir Maharjan³ ¹Tennessee State University, Nashville, Tennessee, United States; ²Tennessee State University, Nashville, Tennessee, United States; ³Tennessee State University, Nashville, Tennessee, United States

- 9:30 AM 407P **Egg Yolk Metabolites as Potential Indicators of Quality**
Thomas A. Calil², Isabela S. Torretta^{*1}, Simone Sommerfeld², Ana Clara F. Silva¹, Hebreia O. Almeida³, Mario M. Martins³, Tiara d. Silva², Bruno Serpa Vieira¹, Belchiorina Beatriz Fonseca⁴ ¹*Federal University of Uberlandia, Uberlandia, Minas Gerais, Brazil*; ²*Federal University of Uberlandia, Uberlandia - MG, Brazil*; ³*Federal University of Uberlandia, Uberlandia, Brazil*; ⁴*Universidade Federal de Uberlandia, Uberlandia, MG, Brazil*
- 9:30 AM 408P **Analysis of microbial diversity and metabolic pathways in the chorioallantoic membrane and intestine during the embryonic development**
Sadid Al Amaz^{*1}, Suman Poudel¹, Md Ahosanul Haque Shahid⁴, Rajesh Jha², Birendra Mishra³ ¹*University of Hawaii at Manoa, Honolulu, Hawaii, United States*; ²*University of Hawaii at Manoa, Honolulu, Hawaii, United States*; ³*University of Hawaii at Manoa, Ewa Beach, Hawaii, United States*; ⁴*University of Hawaii at Manoa, Honolulu, Hawaii, United States*
- 9:30 AM 409P **RNA sequencing-based analysis of fertility-related markers in the oviduct of broiler breeder hens**
Prem L. Mahato^{*1}, Vedbar Khadka², Rajesh Jha³, Ken Macklin⁵, Birendra Mishra⁴ ¹*University of Hawaii at Manoa, Honolulu, Hawaii, United States*; ²*University of Hawaii at Manoa, Honolulu, Hawaii, United States*; ³*University of Hawaii at Manoa, Honolulu, Hawaii, United States*; ⁴*University of Hawaii at Manoa, Ewa Beach, Hawaii, United States*; ⁵*Mississippi State University, Starkville, Mississippi, United States*
- 9:30 AM 410P **Age-related changes in the transcriptomic profile related to ovarian follicle recruitment in commercial laying hens**
Suman Poudel^{*1}, Vedbar Khadka², Rajesh Jha¹, Birendra Mishra¹ ¹*University of Hawaii at Manoa, Honolulu, Hawaii, United States*; ²*University of Hawaii, Honolulu, Hawaii, United States*

Monday PM Poster Session

Ballroom A

- 3:15 PM 411P **Impact of low-quality soybean meal and live coccidiosis vaccination on the cecal microbiome composition of broiler chickens**
Makenly E. Coles^{*1}, Kyle D. Teague¹, Ross Wolfenden², Jundi Liu², Brett Hale³, Christine N. Vuong¹, Billy M. Hargis¹, Danielle Graham¹ ¹*University of Arkansas, Fayetteville, Arkansas, United States*; ²*Eastman Chemical Company, Kingsport, Tennessee, United States*; ³*AgriGro, Inc., Doniphan, Missouri, United States*
- 3:15 PM 412P **Feeding Dietary Black Currant Powder to Turkey Hen Poults**
Ashley Gernat^{*1}, Jesse L. Grimes¹ ¹*North Carolina State University, Raleigh, North Carolina, United States*
- 3:15 PM 413P **Evaluating the Impact of spraying an Enterococcus faecium probiotic at hatch and supplementing feed with a Triple-Strain Bacillus-based additive on BCO Lameness Incidence in Broiler Chickens**
Abdulaziz Alqahtani^{*1}, Khawla Alharbi¹, Anh Do¹, Ruvindu Perera¹, Andi Asnyanti², Alexa Thomas¹, Antoine Meuter⁴, Adnan Alrubaye³ ¹*University of Arkansas, Fayetteville, Arkansas, United States*; ²*University of Arkansas, Fayetteville, Arkansas, United States*; ³*University of Arkansas, Fayetteville, Arkansas, United States*; ⁴*Novonesis Animal and Plant Health & Nutrition, Hørsholm, Denmark*

- 3:15 PM 414P **A machine vision system for detection and classification of poultry manure and disease evaluation**
Anjan Dhungana*¹, Bidur Paneru¹, Samin Dahal¹, Xiao Yang¹, Guoyu Lu², Lilong Chai³ ¹*University of Georgia, Athens, Georgia, United States*; ²*University of Georgia, Athens, Georgia, United States*; ³*University of Georgia, Athens, Georgia, United States*
- 3:15 PM 415P **Plasma proteomic profiling reveals distinct signatures between resistant and susceptible chickens infected with highly pathogenic avian influenza virus**
María José Valdez May*^{1,2}, Albert Perlas-Puente^{1,2}, Rosa Valle^{1,2}, Miquel Nofrarias^{1,2}, Kateri Bertran^{1,2}, Natalia Majo^{1,3} ¹*IRTA. Programa de Sanitat Animal. Centre de Recerca en Sanitat Animal (CRESA). Campus de la Universitat Autònoma de Barcelona (UAB), Barcelona, Barcelona, Spain*; ²*Centre de Recerca en Sanitat Animal (CRESA). Campus de la Universitat Autònoma de Barcelona (UAB), Bellaterra, Barcelona, Spain*; ³*Facultat de Veterinària. Campus de la Universitat Autònoma de Barcelona (UAB), Bellaterra, Barcelona, Spain*
- 3:15 PM 416P **Phylogenetic supplementation modulates performance and pathological responses of turkey poults to histomoniasis induced via lateral transmission of *Histomonas meleagridis* in battery cages**
Abhisek Niraula*¹, Davis A. Fenster¹, Candice E. Blue², Ashley L. Wagner², Bertrand MEDINA², Ivan D. Girard², Alberta L. Fuller¹, Rami A. Dalloul¹ ¹*University of Georgia, Athens, Georgia, United States*; ²*Probiotech International Inc., Saint-Hyacinthe, Quebec, Canada*
- 3:15 PM 417P **Transcriptional changes in mucosal and lymphoid immune tissue of broiler chickens during experimental necrotic enteritis**
Matthew Browning*¹, Pok Man Chan¹, Carissa Gaghan¹, Ravi Kulkarni¹ ¹*North Carolina State University, Raleigh, North Carolina, United States*
- 3:15 PM 418P **Phylogenetic blend positively influence the ileal and cecal microbiota during a necrotic enteritis challenge**
Gabiella C. Ribeiro*¹, Abhisek Niraula¹, Ali Calik³, Candice E. Blue², Ashley L. Wagner², Bertrand MEDINA², Ivan D. Girard², Rami A. Dalloul¹ ¹*University of Georgia, Athens, Georgia, United States*; ²*Probiotech International Inc., Saint-Hyacinthe, Quebec, Canada*; ³*Ankara University, Ankara, Turkey*
- 3:15 PM 419P **Assessment of neutral buffered formalin as a fixative to preserve *Histomonas meleagridis* cell morphology**
Karen Echevarria*¹, Aaron Forga¹, Joaquin J. Esquivel Vergara¹, Zhicheng Dou², Danielle Graham¹ ¹*University of Arkansas, Fayetteville, Arkansas, United States*; ²*Clemson University, Clemson, South Carolina, United States*
- 3:15 PM 420P **A preliminary evaluation demonstrating the resilience of *Histomonas meleagridis* when exposed to acidic conditions in vitro**
Melissa Martinez*¹, Karen Echevarria¹, Aaron Forga¹, Zhicheng Dou², Danielle Graham¹ ¹*University of Arkansas, Fayetteville, Arkansas, United States*; ²*Clemson University, Clemson, South Carolina, United States*
- 3:15 PM 421P **In vitro evaluation of the effects of a *Saccharomyces cerevisiae*-based postbiotic on the growth of three *Salmonella enterica* serotypes**
Paniz Zarghami Dastjerdi*¹, Davis A. Fenster¹, Gabiella C. Ribeiro¹, Rami A. Dalloul¹ ¹*University of Georgia, Athens, Georgia, United States*
- 3:15 PM 422P **Primary vaccination with herpesvirus of turkey (HVT) vaccine stimulated different lymphocyte infiltration profiles in Light-brown Leghorns and scleroderma/systemic sclerosis-expressing UCD200/206 White Leghorns**
Allie K. Bowerman*¹, Jossie M. Santamaria¹, Gisela F. Erf¹, Chrysta N. Beck¹ ¹*University of Arkansas, Fayetteville, Arkansas, United States*

- 3:15 PM 423P **Beta-carotene and lipid metabolism as mediators of probiotic-induced immunometabolism modulation**
 Tamara Pen^{*1}, Lauren Anderson³, Anne Ballou², Natalie Roberts³, Matthew Koci³ ¹*University of Surrey, Guildford, United Kingdom*; ²*Illuma Alliance, Durham, North Carolina, United States*; ³*North Carolina State University, Raleigh, North Carolina, United States*

Monday Evening Poster Session #1

Ballroom A

- 5:30 PM 424P **Quantitative Gait Properties Associated with Subjective Gait Scores in Male Turkeys Reared with Access to Environmental Enrichment**
 Stephanie Kulbacki^{*1}, Brooke Katz¹, Nathan A. Griffith², Marisa A. Erasmus², Luiz F. Brito², Prafulla Regmi¹ ¹*University of Georgia, Athens, Georgia, United States*; ²*Purdue University, McCordsville, Indiana, United States*
- 5:30 PM 425P **Don't ruffle their feathers: Isolation in the light and dark has differential effects on vocalizations but minimal effects on brain serotonin activity in neonatal layers or pullets.**
 Isabella von Seggern^{*1}, Gregory S. Fraley² ¹*Purdue University, West Lafayette, Indiana, United States*; ²*Purdue University, West Lafayette, Indiana, United States*
- 5:30 PM 426P **Effects of provisioning a moonlight regimen on layer fear and stress susceptibility**
 Isabella R. Villarreal^{*1}, Parker Watson¹, Gabrielle House², Aaron Stephan², Gregory Archer³ ¹*Texas A&M University, College Station, Texas, United States*; ²*Once, Indianapolis, Indiana, United States*; ³*Texas A&M AgriLife Extension, College Station, Texas, United States*
- 5:30 PM 427P **Assessing evolving challenges and educational needs in commercial and backyard poultry management**
 Sunoh Che^{*1}, Paul Goeringer⁴, Mostafa Ghanem², Jennifer Rhodes³, Maegan Perdue⁶, Jonathan Moyle⁵ ¹*University of Maryland, College Park, Maryland, United States*; ²*University of Maryland, College Park, Maryland, United States*; ³*University of Maryland, Centreville, Maryland, United States*; ⁴*University of Maryland, College Park, Maryland, United States*; ⁵*University of Maryland, Salisbury, Maryland, United States*; ⁶*University of Maryland, Snow Hill, Maryland, United States*
- 5:30 PM 428P **Mitochondrial calcium overload is associated with the woody breast myopathy in broilers**
 Elizabeth Greene^{*1}, Sami Dridi¹ ¹*University of Arkansas, Fayetteville, Arkansas, United States*
- 5:30 PM 429P **Genetic and histopathological characterization of spaghetti meat in broiler chickens**
 Sunoh Che^{*1}, Rafet Al-Tobasei², Ridwan Ahmed¹, Guglielmo Raymo¹, Ali Ali¹, Mohamed Salem¹ ¹*University of Maryland, College Park, Maryland, United States*; ²*Middle Tennessee State University, Murfreesboro, Tennessee, United States*

- 5:30 PM 430P **Effects of Myostatin Mutation on Temporal Expression of Myosin Heavy Chain Isoforms in Skeletal Muscle of Male Japanese Quail**
 Suhyun An^{*12}, Boin Lee¹³, Dong-Hwan Kim¹⁴, Joonbum Lee¹⁵, Kichoon Lee¹ ¹*Ohio State University, Columbus, Ohio, United States*; ²*Kyungpook National University, Sangju, Korea (the Republic of)*; ³*Sunmoon University, Asan, Korea (the Republic of)*; ⁴*Pusan National University, Pusan, Korea (the Republic of)*; ⁵*Duke University, Durham, North Carolina, United States*
- 5:30 PM 431P **Heritability and genetic correlation of meat production traits in Mexican Creole chickens**
 Diego Zárate-Contreras^{*1}, Arturo Pro-Martínez¹, Henry M. Galván-González³, Eliseo Sosa-Montes³, María Magdalena Crosby-Galván¹, Sergio Iban Mendoza-Pedroza¹, Humberto Vaquera-Huerta², Fernando González-Cerón³, Fredy Mera-Zúñiga⁴ ¹*Colegio de Postgraduados, Texcoco, Estado de México, Mexico*; ²*Colegio de Postgraduados, Texcoco, Estado de México, Mexico*; ³*Universidad Autónoma Chapingo, Texcoco, Estado de México, Mexico*; ⁴*Instituto Tecnológico de Tecamatlán, Tecamatlán, Puebla, Mexico*
- 5:30 PM 432P **Heritability and genetic correlation of egg production traits in Mexican Creole hens**
 Alondra Juárez-Lucas^{*1}, Eliseo Sosa-Montes¹, Diego Zárate-Contreras², Arturo Pro-Martínez², Gustavo Ramírez-Valverde³, Víctor Manuel Valdes-Narvaez², Fernando González-Cerón¹, Sergio Iban Mendoza-Pedroza², Leodan T. Rodríguez-Ortega⁴ ¹*Universidad Autónoma Chapingo, Texcoco, Mexico*; ²*Colegio de Postgraduados, Texcoco, Estado de México, Mexico*; ³*Colegio de Postgraduados, Texcoco, Estado de México, Mexico*; ⁴*Universidad Politécnica de Francisco I. Madero, Francisco I. Madero, Hidalgo, Mexico*
- 5:30 PM 433P **Enteric neurochemical responses to heat stress in Pekin ducks are sex- and diet-dependent**
 Joshua M. Lyte^{*1}, Esther M. Oluwagbenga², Valentina Caputi³, Karrie Daniels⁴, Mark Lyte⁴, Gregory S. Fraley⁵ ¹*USDA-ARS Poultry Production and Product Safety Research Unit, Fayetteville, Arkansas, United States*; ²*Purdue University, West Lafayette, Indiana, United States*; ³*USDA-ARS, Fayetteville, Arkansas, United States*; ⁴*Iowa State University, Ames, Iowa, United States*; ⁵*Purdue University, West Lafayette, Indiana, United States*
- 5:30 PM 434P **Does exposure to blue light from 0-15 or 0-17 weeks of age affect production and health of egg-laying pullets reared to 17 weeks of age?**
 Zoe C. Uhren^{*1}, Tory Shynkaruk¹, Carolin Adler¹, Trever Crowe², Karen Schwan-Lardner¹ ¹*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*; ²*University of Saskatchewan, Saskatoon, Saskatchewan, Canada*
- 5:30 PM 435P **Sustainable pest control: How three pests' insect of poultry farm reacts to a commercial blend of essential oils?**
 Hoa Bui^{*1}, Claire Maltret¹ ¹*Nor-Feed, Beaucouzé, France*
- 5:30 PM 436P **Play that Funky Music Pekin Ducks Part 1: Effects of Auditory Enrichment on Pekin Duck Welfare**
 Brynn C. Peterson^{*1}, Grace Ayres¹, Jordan Curry¹, Emma Stuart¹, Gabriella Chambers¹ ¹*Purdue University, Indianapolis, Indiana, United States*
- 5:30 PM 437P **Play that Funky Music Pekin Duck Part 2: Effects of Auditory Enrichment on production variables.**
 Grace Ayres^{*1}, Gabriella Chambers¹, Emma Stuart¹, Jordan Curry¹, Brynn C. Peterson¹, Elizabeth Karcher¹, Gregory S. Fraley¹, Jenna M. Schober¹ ¹*Purdue University, West Lafayette, Indiana, United States*

- 5:30 PM 438P **Understanding Varying Level of Hydrogen Peroxide Residuals in Poultry Drinking Water in Early Broiler Growth Performance**
Biswajit Kumar Biswas^{*1}, Rabin Raut², Md Raihanul Hoque¹, Thyneice Bowden¹, Samuel N. Nahashon¹, Pramir Maharjan¹ ¹Tennessee State University, Nashville, Tennessee, United States; ²Auburn University, Auburn, Alabama, United States
- 5:30 PM 439P **Early Non-Destructive Assessment of Broiler Egg Fertility by SBSE/GC×GC-MS Analysis**
Xiaojuan (Judy) Song^{*1}, Christopher A. Heist¹, Olga Kemenova¹, Benjamin Allen², Douglas Aldridge², Brian Fairchild³, Doug Britton¹
¹Georgia Tech Research Institute, Atlanta, Georgia, United States; ²Aviagen, Harvest, Alabama, United States; ³University of Georgia, Athens, Georgia, United States
- 5:30 PM 440P **Parental orange corn diet alleviated glucocorticoid response but did not alleviate the impaired growth or heightened fear caused by parental heat stress exposure in F1 Pekin ducks.**
Esther M. Oluwagbenga^{*1}, Evan Rocheford², Torbert Rocheford³, Melanie M. Bergman¹, Jenna M. Schober¹, Gregory S. Fraley¹ ¹Purdue University, West Lafayette, Indiana, United States; ²Nutrimaize, West Lafayette, Indiana, United States; ³Purdue University, West Lafayette, Indiana, United States
- 5:30 PM 441P **Orange corn diet altered serotonin and dopamine activity in the brain while heat stress altered total antioxidant capacity in a sex dependent manner in Pekin ducks**
Esther M. Oluwagbenga^{*1}, Serena M. Wesley¹, Evan Rocheford², Torbert Rocheford³, Gregory S. Fraley¹ ¹Purdue University, West Lafayette, Indiana, United States; ²Nutrimaize, West Lafayette, Indiana, United States; ³Purdue University, West Lafayette, Indiana, United States
- 5:30 PM 442P **Vaginal swab lipid profiles of high and low fertility broiler breeder hens**
Diane Hildenberger², Madison Berger¹, Patricia Quino¹, Kristian Almendares¹, Christina R. Ferreira⁴, Brenda Flack³, Charlene Hanlon^{*1}, Kristen Diehl² ¹Auburn University, Auburn, Alabama, United States; ²USDA-ARS, Beltsville, Maryland, United States; ³Cobb-Vantress, Siloam Springs, Arkansas, United States; ⁴Perdue University, West Lafayette, Indiana, United States

Monday Evening Poster Session #2

Ballroom A

- 6:15 PM 443P **Case Study: Boosting Vaccine Titer Production in Pullets During Stress Periods utilizing PHYTOZEN®**
Ashley L. Wagner¹, Jessica K. Suagee-Bedore², Olivia A. Martin¹, Candice E. Blue^{*1}, Bill Achor³, Ivan D. Girard¹ ¹Probiotech International Inc., Saint-Hyacinthe, Quebec, Canada; ²Virginia Tech, Blacksburg, Virginia, United States; ³York Ag Products, York, Pennsylvania, United States
- 6:15 PM 444P **Effect of dietary inclusion of fermented and non-fermented grape pomace on growth performance and gut function of broilers under chronic inflammation**
Milan K. Sharma^{*1}, Nikita Agarwal¹, Eliot M. Dugan¹, Peter R. Gracey¹, Melissa Huang¹, Sara E. Stadulis¹, Patrick A. Gibney¹, Lee Voth-Gaeddert², Elad Tako¹ ¹Cornell University, Ithaca, New York, United States; ²Arizona State University, Tempe, Arizona, United States

- 6:15 PM 445P **The effect of Tart Cherry Pit Extract (TCPE), at three inclusion rates in feed or water, on growth performance of 1-to-14-day old broiler chicks**
Theresia Lavergne^{*1}, Charlie Elrod¹, Haylee Reisinger², Laman Mamedova², Bahar Aliakbarian², Barry Bradford² ¹Natural Biologics, Inc., Newfield, New York, United States; ²Michigan State University, East Lansing, Michigan, United States
- 6:15 PM 446P **Pilot study: Evaluation of the antiprotozoal activity of phytogetic candidates on *Histomonas meleagridis* infection in turkeys**
Jesus A. Maguey-Gonzalez^{*1}, Andressa S. Stein¹, Raul Rosalino¹, Roberto Senas¹, Ileana Loeza¹, Brandon Lopez-Romero², Billy M. Hargis¹, Danielle Graham¹, Juan D. Latorre¹ ¹University of Arkansas, Fayetteville, Arkansas, United States; ²Tecnologico Nacional de Mexico, Tepic, Mexico
- 6:15 PM 447P **Evaluation of the Effectiveness of the Avisan Secure Vaccine in Controlling Salmonella in a Broiler Breeder Flock**
Kaveh Parvandar Asadollahi^{*1} ¹Science and Research Branch, Islamic Azad University, Tehran, IRAN, Tehran, Iran (the Islamic Republic of)
- 6:15 PM 448P **High Throughput Individualized Vaccination Improves Vaccine Take and Output in Day-Old Chicks**
John M. Ngunjiri^{*1} ¹TARGAN Inc., Raleigh, North Carolina, United States
- 6:15 PM 449P **Evaluating the Function of *pagP* in Avian Pathogenic *Escherichia coli* Pathogenicity Using an Embryo Challenge Model**
Hailey Fugate^{*1}, Linan Jia¹, Xin Ye¹, Xue Zhang², Pratima Adhikari¹, Ken Macklin¹, Kelsy Robinson³, Li Zhang¹ ¹Mississippi State University, Mississippi State, Mississippi, United States; ²Mississippi State University, Mississippi State, Mississippi, United States; ³USDA-ARS, Starkville, Mississippi, United States
- 6:15 PM 450P **Molecular characterization of hydrogenosomal iron superoxide dismutase in *Histomonas meleagridis***
Tabitha Varnell^{*1}, Alessandro J. Rocchi², Danielle Graham³, Billy M. Hargis³, Zhicheng Dou¹ ¹Clemson University, Central, South Carolina, United States; ²Clemson University, Bentonville, Arkansas, United States; ³University of Arkansas, Fayetteville, Arkansas, United States
- 6:15 PM 451P **Evaluation of a novel electron beam-inactivated vaccine against avian pathogenic *Escherichia coli* in chicken**
Monzur Chowdhury^{*1}, Christopher Magee², Jeffrey Evans², Palmy Jesudhasan³, Li Zhang¹, Kelsy Robinson² ¹Mississippi State University, Mississippi State, Mississippi, United States; ²USDA, Mississippi State, Mississippi, United States; ³USDA, Mississippi State, Mississippi, United States
- 6:15 PM 452P **Assessing cell-type population differences in the jejunum of uninfected and coccidia-infected BQ and B19 chickens using spatial and single-cell transcriptomics**
Brandi A. Sparling^{*1}, Hoangvi Le¹, Theros T. Ng¹, Yvonne Drechsler¹ ¹Western University of Health Sciences, Pomona, California, United States
- 6:15 PM 453P **Development and validation of a TaqMan-based multiplex qPCR assay for profiling pro-inflammatory cytokine responses in poultry infected with avian pathogenic *Escherichia coli* (APEC)**
Xin Ye^{*1}, Chuan-Yu Hsu², Linan Jia¹, Christopher Magee³, Spencer Leigh³, Jeffrey Evans³, Li Zhang¹, Kelsy Robinson³ ¹Mississippi State University, Mississippi State, Mississippi, United States; ²Mississippi State University, Mississippi State, Mississippi, United States; ³USDA-ARS, Starkville, Mississippi, United States
- 6:15 PM 454P **Comparison of Analytical Methods for Measuring Trypsin Inhibitor Activity in Soybean Products**
Jinlei (James) Wen^{*1}, Sunhyung Kim³, Hari B. Krishnan²³ ¹Evonik Corporation, Kennesaw, Georgia, United States; ²USDA-ARS, Columbia, Missouri, United States; ³University of Missouri, Columbia, Missouri, United States

- 6:15 PM 455P **Potential of sow spleen as a sustainable immune and growth promoter for young broiler chickens**
Xiaoning Liu^{*1}, Pedro E. Urriola¹, Chi Chen¹², Lauren Sammel³, Jinsu Hong¹ ¹*University of Minnesota, Saint Paul, Minnesota, United States;*
²*University of Minnesota, Saint Paul, Minnesota, United States;*
³*Sustainable Swine Resources, Sheboygan Falls, Wisconsin, United States*
- 6:15 PM 456P **Effect of cyclic heat stress and bird strains on performance and egg quality in laying hens**
Taiwo J. Alabi^{*1}, Hansol Kim¹, Sammad F. Olayiwola¹, Michael Ford¹, Jacqueline Jacob¹, Sunday Adedokun¹ ¹*University of Kentucky, Lexington, Kentucky, United States*
- 6:15 PM 457P **Flaxseed Oil Improves Growth Performance and Modulates Liver Metabolomics in Broiler Chickens**
Yewande Fasina^{*1}, Paul Omaliko¹, Safiu Suberu¹, Odinaka Iwuzo¹, Oluteru Orimaye¹ ¹*North Carolina A&T State University, Greensboro, North Carolina, United States*
- 6:15 PM 458P **Influence of the origin of the soybeans on the composition of the carbohydrate fraction of soybeans meal arriving to European ports**
Guillermo Talegón^{*1}, Rosa Lázaro¹, Lourdes Cámara¹, Javier García¹, Gonzalo González Mateos¹ ¹*UPM, Madrid, Madrid, Spain*
- 6:15 PM 459P **Determining the nutrient and anti-nutrient variability in Asia-sourced barley and canola meal**
Caleb M. Marshall^{*1}, Virginie Blanvillain², Edgar O. Oviedo-Rondon¹
¹*North Carolina State University, Raleigh, North Carolina, United States;* ²*AB Vista, Plantation, Florida, United States*
- 6:15 PM 460P **Influence of the metabolizable energy and amino acid content of the diet on growth performance and fecal biomarkers in broilers from 1 to 35 days of age**
Nada Souid¹, Nereida Luna Corrales¹, Guillermo Talegón¹, Gonzalo González Mateos^{*1}, Vasil Stanev² ¹*UPM, Madrid, Spain;* ²*Phibro Animal Health, Wavre, Belgium*
- 6:15 PM 461P **Effect of split feeding on nutrient digestibility in Bovans White laying hens**
María Guadalupe Zambrano Velasco^{*1}, Juan Manuel Cuca García¹, Arturo Pro-Martínez¹, Fernando Gonzalez-Ceron², Eliseo Sosa-Montes¹, Benito Bello-Olivera², María Magdalena Crosby-Galván¹
¹*Colegio de Postgraduados, Texcoco de Mora, Mexico;* ²*Universidad Autónoma Chapingo, Texcoco de Mora, Mexico*
- 6:15 PM 462P **Gompertz-Laird model prediction of optimum utilization of arginine by the French Guinea fowl broilers**
Samuel N. Nahashon^{*1}, Thyneice Bowden¹, Jaden Battle¹ ¹*Tennessee State University, Nashville, Tennessee, United States*

Tuesday AM Poster Session

Ballroom A

- 10:00 AM 463P **The effects of feeding a xylanase – beta-glucanase combination on growth performance and energy efficiency in broilers fed a complex diet**
Emily Jiral^{*1}, Gregory Archer², Abiodun Bello³, Sasha van der Klein³, Kirsty Gibbs³, Yueming dersjant-li³, Susan Arent⁴, Ester Vinyeta⁴ ¹Texas A&M University, College Station, Texas, United States; ²Texas A&M AgriLife Extension, College Station, Texas, United States; ³Danisco Animal Nutrition & Health, Oegstgeest, Netherlands; ⁴Dansico Animal Nutrition & Health, Brabrand, Denmark
- 10:00 AM 464P **Evaluating the Impact of a Novel Inulin Product on 21 Day Broiler Performance**
Emily Magee^{*1}, Timothy Boltz¹ ¹Mississippi State University, Starkville, Mississippi, United States
- 10:00 AM 465P **Evaluation of supplementing different phytogetic substances on broiler growth and gut health to 35 days of age**
Colby Allensworth^{*1}, Parker Watson¹, Gregory Archer² ¹Texas A&M University, Bryan, Texas, United States; ²Texas A&M AgriLife Extension, College Station, Texas, United States
- 10:00 AM 466P **Impact of Iron Supplement SQM® on Microbiome Composition and Vaccination Efficacy Against Non-typhoidal *Salmonella enterica* in Ross 708 Broilers**
Eldon Ager^{*1}, Colette Nickodem², Jessica Hite² ¹University of Wisconsin-Madison, Madison, Wisconsin, United States; ²University of Wisconsin-Madison, Madison, Wisconsin, United States
- 10:00 AM 467P **Performance impacts of dietary energy in a laying hen strain at late phase of production**
Faija S. Pory^{*1}, Biswajit Kumar Biswas¹, Naudia Clark¹, Md Raihanul Hoque¹, Samuel N. Nahashon¹, Pramir Maharjan¹ ¹Tennessee State University, Nashville, Tennessee, United States
- 10:00 AM 468P **Determination of TME_n standardized amino acid digestibility and trypsin inhibitor activity in new reduced trypsin inhibitor varieties of soybeans**
Saul Rosales^{*1}, Pam L. Utterback¹, Wonseok Kim², Sunhyung Kim⁴, Hari B. Krishnan², Carl Parsons³ ¹University of Illinois Urbana-Champaign, Champaign, Illinois, United States; ²USDA-ARS, Columbia, Missouri, United States; ³University of Illinois, Champaign, Illinois, United States; ⁴University of Missouri, Columbia, Missouri, United States
- 10:00 AM 469P **Feeding live black soldier fly larvae (*Hermetia illucens*) affects fatty acid composition in egg yolk of Lohman brown laying hens**
Nathalie S. Stöhr^{*123}, Jörg G. Brettschneider¹, Laura Schneider¹, Jenny Stracke², Rajesh Jha³, Georg Dusel¹ ¹University of Applied Sciences Bingen, Bingen am Rhein, Germany; ²Institute of Animal Science, Farm Animal Ethology, Bonn, Germany; ³University of Hawaii at Manoa, Honolulu, Manoa, Hawaii, United States
- 10:00 AM 470P **Determination of TMEn and standardized amino acid digestibility in high-oil corn fed to chickens**
Andrea Paola Mallea Ortiz^{*1}, Pam L. Utterback², JUAN CARLOS VALENCIA BELTRAN², Minoy Cristobal³, Charles Brown⁴, Kurt Dieker⁵, Carl Parsons⁶ ¹University of Illinois, Urbana, Illinois, United States; ²University of Illinois at Urbana-Champaign, Urbana, Illinois, United States; ³University of Illinois at Urbana-Champaign, Champaign, Illinois, United States; ⁴Brownseed Genetics LLC, Bay City, Wisconsin, United States; ⁵HYC01, Maize, Kansas, United States; ⁶University of Illinois, Champaign, Illinois, United States

- 10:00 AM 471P **Effects of *in ovo* docosahexaenoic acid supplementation injection on muscle proliferation and antioxidant gene expression in the embryo of broiler chickens**
Suresh Burlakoti^{*1}, Pravin Mishra¹, Bal Krishna Pandey¹, Sachi Katsumata²¹, Birendra Mishra¹, Rajesh Jha¹ ¹*University of Hawaii at Manoa, Honolulu, Hawaii, United States;* ²*Okayama University, Okayama, Okayama, Japan*
- 10:00 AM 472P **Impact of varying corn particle size and feed quality during the finisher phase (d 27-35) with and without a subclinical necrotic enteritis challenge on broiler gastrointestinal measurements challenged with a 10x live coccidiosis vaccine**
Kendall B. Parks^{*1}, Jorge A. Urrutia², Timothy Boltz³, Kelley G. Wamsley² ¹*Mississippi State University, Cumming, Georgia, United States;* ²*Mississippi State University, Starkville, Mississippi, United States;* ³*Mississippi State University, Starkville, Mississippi, United States*
- 10:00 AM 473P **Fast-growing broilers pair-fed to slow-growing broilers to investigate the effect of feed intake on breast meat quality and oxidant markers**
Elizabeth Lott^{*1}, Michael Cressman¹, Rui Zheng¹, Sheila K. Jacobi¹ ¹*Ohio State University, Columbus, Ohio, United States*
- 10:00 AM 474P **Comparison of Ca Bioavailability Based on Tibia Bone Ash and Apparent Ileal Ca Digestibility in CaCO₃ With and Without MgO Supplementation**
Seth Hufford^{*1}, Stephanie A. Shouse¹, Danielle Graham³, Benjamin Parsons² ¹*University of Arkansas, Fayetteville, Arkansas, United States;* ²*University of Arkansas, Fayetteville, Arkansas, United States;* ³*University of Arkansas, Fayetteville, Arkansas, United States*
- 10:00 AM 475P **Evaluation of dietary zinc and manganese source and level on the performance and yield of Ross 708 broilers processed at 8 weeks of age**
Nelsa Beckman^{*1}, Karlinton Flores², Marcos Rostagno², Samuel Rochell³ ¹*Auburn University, Auburn, Alabama, United States;* ²*Selko USA, Indianapolis, Indiana, United States;* ³*Auburn University, Auburn, Alabama, United States*
- 10:00 AM 476P **Dose response of novel calcium supplement source in broiler pens**
Hallie Soltis^{*1}, Cameron McCurdy¹, Benjamin Wenner², Michael Cressman¹ ¹*Ohio State University, Columbus, Ohio, United States;* ²*Feedworks USA, Ltd, Cincinnati, Ohio, United States*

Tuesday PM Poster Session

Ballroom A

- 3:15 PM 477P **Genomic characterization of bacterial isolates from broiler chicken cecal microbiota**
Manhong Wang^{*1}, Chuan-Yu Hsu², Mark A. ArickII², Xue Zhang³, Pratima Adhikari¹, Peixin Fan³, Katie Elliot⁴, Ken Macklin¹, Li Zhang⁵
¹*Mississippi State University, Mississippi State, Mississippi, United States;* ²*Mississippi State University, Mississippi State, Mississippi, United States;* ³*Mississippi State University, Mississippi State, Mississippi, United States;* ⁴*USDA, Mississippi State, Mississippi, United States;* ⁵*Mississippi State University, Mississippi State, Mississippi, United States*

- 3:15 PM 478P **Surveillance of antibiotic-resistant *Salmonella* and *Campylobacter* in turkey carcass rinses across the United States**
Afrina Akter Turna^{*1}, Roberta Anderson Shafer^{1,2}, Tomi Obe^{1,3}
¹University of Arkansas, Fayetteville, Arkansas, United States;
²University of Arkansas, Fayetteville, Arkansas, United States;
³University of Arkansas Division of Agriculture, Fayetteville, Arkansas, United States
- 3:15 PM 479P **Comparing the effects of *Propionibacterium freudenreichii* and *Salmonella* Typhimurium vaccine on cecal colonization, internal organ dissemination, and cecal microbial populations in *Salmonella* Infantis-infected broiler chickens**
Dhananjai Muringattu Prabhakaran^{*1}, Amritha Ajayan³, Hamza Javaid⁴, Tim Johnson⁵, Anup Kollanoor Johny² ¹University of Minnesota, Saint Paul, Minnesota, United States; ²University of Minnesota, Woodbury, Minnesota, United States; ³University of Minnesota, Saint Paul, Minnesota, United States; ⁴University of Minnesota, Saint Paul, Minnesota, United States; ⁵University of Minnesota, Saint Paul, Minnesota, United States
- 3:15 PM 480P **Effect of eugenol nanoemulsion in inactivating *Salmonella* Enteritidis survival on broiler chicken skin during refrigerated storage**
Jodie T. Allen^{*1}, Yangchao Luo², Indu Upadhyaya³, Abhinav Upadhyay¹ ¹University of Connecticut, Windsor, Connecticut, United States; ²University of Connecticut, Storrs, Connecticut, United States; ³University of Connecticut, Storrs, Connecticut, United States
- 3:15 PM 481P **Evaluation of the *Enterococcus cecorum* inhibitory effect of cell-free supernatants obtained from different *Bacillus* spp. using an *in vitro* inhibition assay**
Diego Cortes^{*1}, Aaron Forga¹, Kasey A. Matusik¹, Carl Jones², Charlie Elrod², Theresia Lavergne², Danielle Graham¹ ¹University of Arkansas, Fayetteville, Arkansas, United States; ²Natural Biologics, Inc., Stephenville, Texas, United States
- 3:15 PM 482P **Population and prevalence of *Salmonella*: A Comparison between conventional floor-pen and silvopasture housing systems in fast and slow-growing broiler birds.**
Yabaiz Tahir^{*1}, Justin H. Lowery², Krista Chang¹, Athena He-DeMontaron³, Jean C. Concepcion¹, Jesse L. Grimes¹, Yan L. Campbell¹, Allison Pullin⁴, Lin Walker¹ ¹North Carolina State University, Raleigh, North Carolina, United States; ²North Carolina State University, Raleigh, North Carolina, United States; ³North Carolina State University, Raleigh, North Carolina, United States; ⁴North Carolina State University, Raleigh, North Carolina, United States
- 3:15 PM 483P **Recovery of salmonellae from chicken enteroids, with or without D-mannose medium treatment**
Lauren M. Lavery^{*1}, Kristen Martin¹, Juan D. Latorre¹, Billy M. Hargis¹ ¹University of Arkansas, Fayetteville, Arkansas, United States
- 3:15 PM 484P **Construction and characterization of bioluminescent avian pathogenic *Escherichia coli* (APEC) strain to understand the pathogenesis of colibacillosis in poultry**
Carlos A. Guardado^{*1}, Linan Jia¹, Monzur Chowdhury², Li Zhang³, Ken Macklin¹, Jean Feugang⁴, Pratima Adhikari¹ ¹Mississippi State University, Mississippi State, Mississippi, United States; ²Mississippi State University, Starkville, Mississippi, United States; ³Mississippi State University, Mississippi State, Mississippi, United States;
⁴Mississippi State University, Starkville, Mississippi, United States

- 3:15 PM 485P **Inspiring future engineers in next generation poultry processing**
Jenny Z. Hou*^{1,2}, Andrew Gay^{1,2}, William Freidank¹, Nathan Damen¹, Walker Byrnes¹, Konrad Ahlin¹, Doug Britton¹ ¹*Georgia Tech Research Institute, Atlanta, Georgia, United States*; ²*Georgia Institute of Technology, Atlanta, Georgia, United States*
- 3:15 PM 486P **The Use of Peracetic Acid (PAA) in Dip Application on Broiler Breast Fillet Meat Quality**
Adalyn M. Hanning*^{5,1}, Joaquin J. Esquivel Vergara⁴, Sarah E. Johnson³, Eniola Betiku⁶, Tomi Obe², Casey M. Owens¹ ¹*University of Arkansas, Fayetteville, Arkansas, United States*; ²*University of Arkansas, Fayetteville, Arkansas, United States*; ³*University of Arkansas, Fayetteville, Arkansas, United States*; ⁴*University of Arkansas, Fayetteville, Arkansas, United States*; ⁵*Har-Ber High School, Springdale, Arkansas, United States*; ⁶*University of Arkansas, Fayetteville, Arkansas, United States*
- 3:15 PM 487P **Consideration of multiple feed additives trials and the impact on woody breast frequency**
Krystell Charles*¹, Kelley G. Wamsley¹, Hudson Thames¹ ¹*Mississippi State University, Starkville, Mississippi, United States*

Tuesday Evening Poster Session #1

Ballroom A

- 5:30 PM 488P **Effects of Betaine supplementation on growth performance, nutrient digestibility, egg quality, water loss, gas emissions, and blood profile in laying hens under heat stress**
Se Yeon Jang*^{1,2}, Zhenyu Ding^{1,2}, In Ho Kim^{1,2} ¹*Dankook University, Cheonan, Choongnam, Korea (the Democratic People's Republic of)*; ²*Smart AnimalBio Institute, Cheonan, Choongnam, Korea (the Republic of)*
- 5:30 PM 489P **Impact of *Pediococcus acidilactici* CNCM I-4622 supplementation on reproductive performance in commercial turkey breeders**
Eric B. Sobotik*¹, Kay Russo¹, Audrey Sacy², Eric Chevaux², Vanessa Demey², Yannig LeTreut² ¹*RSM Consulting LLC, New Haven, Indiana, United States*; ²*Lallemand Animal Nutrition, Blagnac, France*
- 5:30 PM 490P **Microbial supplementation in turkey production: three decades of practical applications and key learnings**
Eric B. Sobotik*¹, Kay Russo¹, Audrey Sacy², Vanessa Demey², Pierre lebreton² ¹*RSM Consulting LLC, New Haven, Indiana, United States*; ²*Lallemand Animal Nutrition, Blagnac, France*
- 5:30 PM 491P **The effect of pigment saponification and dispersing agent on egg yolk pigmentation**
Thoai Pham*¹, Thomas Clifford¹, Rachael Millard¹, Vanessa Iseri², Mitchell Poss¹, Pam L. Utterback³, Carl Parsons³ ¹*Kemin Industries, Des Moines, Iowa, United States*; ²*Kemin, Des Moines, Iowa, United States*; ³*University of Illinois, Champaign, Illinois, United States*

- 5:30 PM 492P **Assessing brown and white mushroom stem powders as sustainable substitutes for soybean meal in poultry nutrition**
Ahmed A. Abdel-Wareth^{*1}, Kayla Stamps¹, Md Salahuddin¹, Ahmed Ahmed², Venkatesh Balan³, Maedeh Mohammadi³, Woo K. Kim⁴, Weihang Zhu³, Cassandra Gray¹, Adrian Aviña¹, Taylor R. Carter¹, Trahmilla Carr Carr¹, Amri Williams¹, Adebowale Bakare², Jayant Lohakare⁵ ¹*Prairie View A&M University, Texas, Prairie View, Texas, United States*; ²*Prairie View A&M University, Prairie View, Texas, United States*; ³*University of Houston, Houston, Texas, United States*; ⁴*University of Georgia, Athens, Georgia, United States*; ⁵*Prairie View A&M University, Prairie View, TX, Prairie View, Texas, United States*
- 5:30 PM 493P ***Spirulina platensis* supplementation reshapes gut microbiota and functional metabolic pathways in laying hens**
Md Salahuddin^{*1}, Kayla Stamps¹, Ahmed A. Abdel-Wareth¹, Cassandra Gray¹, Adrian Aviña¹, Taylor R. Carter¹, Trahmilla Carr Carr¹, Jayant Lohakare¹ ¹*Prairie View A&M University, Texas, Prairie View, Texas, United States*
- 5:30 PM 494P **Evaluation of organic KEM GLO™ product in laying hen diet**
Helen Tran^{*1}, Vanessa Iseri², Elsie Rankin^{1,2}, Katherine Jo Galayda³
¹*Kemin Inc, Des Moines, Iowa, United States*; ²*Kemin, Des Moines, Iowa, United States*; ³*Kemin Industries, Des Moines, Iowa, United States*
- 5:30 PM 495P **Evaluating the effects of a blend of short- and medium-chain monoglycerides on intestinal functions using an apical-out chicken enteroids model**
Jundi Liu^{*1}, Peter Mann², Ross Wolfenden¹, Yihang Li² ¹*Eastman Chemical Company, Kingsport, Tennessee, United States*; ²*University of Delaware, Newark, Delaware, United States*
- 5:30 PM 496P **The effects of supplementing a bacterial xylanase and a multi-component protease on growth performance, fermentation metabolites, and economic benefits in broiler chickens**
Olufemi O. Babatunde^{*1}, Danielle Marie Estacio¹, Glenmer B. Tactacan¹, Ludovic Lahaye¹, Mariana L. de Moraes¹, Thais B. Stefanello¹, Dimitri Malheiros¹, Christelle Boudry², Sudipto Halder³ ¹*Jefo Nutrition Inc., Saskatoon, Saskatchewan, Canada*; ²*Belfeed NV, Andenne, Belgium*; ³*Agrivet Research & Advisory Pvt. Ltd., Kolkata, India*
- 5:30 PM 497P **Effects of *Trisetum flavescens* Extract in Feed on Production Performance and Eggshell Quality of Laying Hens at 94 Weeks of Age**
Cleverson D. Souza^{*1}, Dimitri M. Freitas¹, Rafael M. Martins¹, Clovis E. Gewehr² ¹*Phytobiotics, Londrina, Parana, Brazil*; ²*Universidade do Estado de Santa Catarina, Lages, Santa Catarina, Brazil*
- 5:30 PM 498P **Does Butyric Acid Enhance the Effects of a Blend of Organic Acid and Essential Oil Blends? Findings in Broilers Facing a Gut Challenge**
Thais B. Stefanello^{*1}, Mariana L. de Moraes¹, Marcia d. Vieira¹, Heitor V. Rios¹, Yuri K. Dalmoro², Catarina Stefanello² ¹*Jefo Nutrition Inc., Saint-Hyacinthe, Quebec, Canada*; ²*Federal University of Santa Maria, Santa Maria, Brazil*
- 5:30 PM 499P **Are all “total polyphenols” really the same? A comparative study of two sources of polyphenols on the antioxidant defenses in broiler chickens**
Paul Engler¹, Sekhou Cisse¹, Amine Benarbia^{*1} ¹*Nor-Feed, Beaucauzé, France*
- 5:30 PM 500P **Effect of a natural phosphatidylcholine source on layers' performance and egg composition**
Michel Colin¹, Anne Yvonne Prigent¹, Cinta Sol², Felipe Horta², Javier Gonzalez^{*2} ¹*Copri SAS, Ploudalmezeau, France*; ²*Nuproxa Switzerland Ltd., Etoy, Switzerland*
- 5:30 PM 501P **Effect of corn particle size and essential oils on broiler live performance, digesta retention time, and meat quality of broiler chickens**
Basheer Nusairat^{*1}, Kamel Mahmoud¹ ¹*Jordan University of Science and Technology, Irbid, Jordan*

- 5:30 PM 502P **Supplementation of organic trace minerals and prebiotics in broiler diets with varying levels of soy**
Harriet K. Walker¹, Dawn Scholey², Helen Warren¹, Jules Taylor-Pickard¹, Ben Gadsby², Jose Soto^{*3}, Emily Burton² ¹*Alltech, Stamford, Lincs, United Kingdom*; ²*Nottingham Trent University, Nottingham, United Kingdom*; ³*Alltech, Nicholasville, Kentucky, United States*
- 5:30 PM 503P ***In ovo* docosahexaenoic acid supplementation and its effects on serotonin and neuropeptide Y-related genes during chicken embryogenesis**
Sachi Katsumata^{*12}, Pravin Mishra², Bal Krishna Pandey², Suresh Burlakoti², Birendra Mishra², Rajesh Jha² ¹*Okayama University, Okayama, Okayama, Japan*; ²*University of Hawaii at Manoa, Honolulu, Hawaii, United States*
- 5:30 PM 504P **Effect of feeding a novel phytogetic feed additive on growth performance and clinical outcomes of broilers administered a mixed *Eimeria* spp. challenge**
Mickie Metz^{*1}, Ellen Davis¹, Prashant Mishra¹, Stacie Crowder¹ ¹*Land O Lakes, Stoughton, Wisconsin, United States*
- 5:30 PM 505P **The effect of feeding new *Bacillus* probiotic strains on the growth of Ross 708 male broilers**
Abigail Flores^{*1}, Rosana Hirai¹, Addison Elstner¹, Rahul Reddy¹, Austin Silva¹, Camryn Wilder¹, Kasey Young¹, Skylar White², Charles Greenwald², Audrey McElroy¹ ¹*Texas A&M University, College Station, Texas, United States*; ²*NCH Life Sciences, Irving, Texas, United States*
- 5:30 PM 506P **Prolonged Subinhibitory Exposure to a Phytogetic Feed Additive Does Not Induce Resistance in *Escherichia coli* Strains**
Karine LAMARRE², Ashley L. Wagner^{*1}, Bertrand MEDINA¹, Ivan D. Girard¹, Martine BOULIANNE² ¹*PROBIOTECH International Inc., Saint Hyacinthe, Quebec, Canada*; ²*Faculté de Médecine Vétérinaire - Université de Montréal, St-Hyacinthe, Quebec, Canada*
- 5:30 PM 507P **Bile acids improve energy digestibility in broilers**
BRUNO G. AMORIM^{*1}, Dehao He², Antonio Gilberto Bertechini³, Bernardo R. nogueira³, Lívia G. Ferreira⁴ ¹*MCASSAB, Belo Horizonte, Minas Gerais, Brazil*; ²*Lachance, Jinan, Shandong, China*; ³*Federal University of Lavras, Lavras, Brazil*; ⁴*UNIBH, Belo Horizonte, Brazil*
- 5:30 PM 508P **Effect of prebiotic and organic acid supplementation on productive performance, carcass yield and skin pigmentation of broiler chickens**
Cesar Pacheco-Hernandez^{*1}, Jaime Leon-Landeros², Arturo Pro-Martinez², Fernando Gonzalez-Ceron¹, Diego Zarate-Contreras², Omar Hernandez-Mendo², Victor Manuel Valdes-Narvaez², Eliseo Sosa-Montes¹ ¹*Universidad Autónoma Chapingo, Texcoco, Mexico*; ²*Colegio de Postgraduados, Texcoco, Mexico*

Tuesday Evening Poster Session #2

Ballroom A

- 6:15 PM 509P **A multicomponent protease improves the productive performance of laying hens reared in high temperature and humidity conditions**
Thais B. Stefanello^{*1}, Mariana L. de Moraes¹, Heitor V. Rios¹, Marcia d. Vieira¹, Ludovic Lahaye¹, Raúl Santamaria², Diego Purón² ¹*Jefo Nutrition Inc., Saint-Hyacinthe, Quebec, Canada*; ²*Centro de Investigación Animal Aplicada, Chablekal, Mexico*
- 6:15 PM 510P **Effects of a low crude protein amino acid-balanced diet on performance, egg quality, nutrient digestibility, and gas emissions in Hy-line brown laying hens**
KyeJin Lee^{*12}, Usman Ali¹², In Ho Kim¹ ¹*Dankook University, Cheonan, Choongnam, Korea (the Democratic People's Republic of)*; ²*Smart AnimalBio Institute, Cheonan, Choongnam, Korea (the Republic of)*
- 6:15 PM 511P **In ovo supplementation of combined chelated minerals (Zn, Fe, & Mn) enhances chicken embryonic development and nutrient absorption, and modulates immune and antioxidant responses**
Atul Jadhav¹, Ayobami T. Aboderin¹, Bushansingh Baurhoo¹², Raj Duggavathi¹, Alexander Yitbarek^{*3} ¹*McGill University, Sainte-Anne-De-Bellevue, Quebec, Canada*; ²*Belisle Solution and Nutrition Inc., Saint-Mathias-sur-Richelieu, Quebec, Canada*; ³*University of Delaware, Newark, Delaware, United States*
- 6:15 PM 512P **Niacin supplementation effects on broiler growth performance**
Victoria Wilson^{*1}, Carter D. Minson¹, R S. Beyer², Haley Otott¹, Diego Lopez¹, Walter G. Friesen¹, Allison Bloome¹, Chad Paulk¹ ¹*Kansas State University, Manhattan, Kansas, United States*; ²*Kansas State University, Manhattan, Kansas, United States*
- 6:15 PM 513P **Prevalence, serotyping and antimicrobial resistance analysis of *Salmonella* isolated from the pastured poultry farm**
Minho Kim^{*1}, Walid Al Hakeem², Taejung Chung³, Sohyun Cho⁴, Xiang Li⁵, Laura E. Ellestad⁷, Prafulla Regmi⁶, Adelumola Oladeinde⁴, Michael J. Rothrock⁴ ¹*USDA-ARS, Athens, Georgia, United States*; ²*USDA, Athens, Georgia, United States*; ³*USDA-ARS, Athens, Georgia, United States*; ⁴*USDA-ARS, Athens, Georgia, United States*; ⁵*USDA-ARS, Athens, Georgia, United States*; ⁶*University of Georgia, Athens, Georgia, United States*; ⁷*University of Georgia, Athens, Georgia, United States*
- 6:15 PM 514P **Synbiotic nutritional additives reduce *in vitro* growth of avian pathogenic *E. coli* (APEC)**
Helen Smith¹, Lauren Nolan^{*2}, Karina Horgan¹, Ronan Power², Richard Murphy¹ ¹*Alltech European Bioscience Centre, Dunboyne, Co. Meath, Ireland*; ²*Alltech Global Headquarters, Nicholasville, Kentucky, United States*
- 6:15 PM 515P **Microbial Volatile Organic Compounds (mVOCs) as Early Indicators of Contamination during Incubation of SPF White Leghorn Eggs**
Stephanie Richter^{*1}, Caitlin Harris², Christopher A. Heist¹, Olga Kemenova¹, Daniel Sabo¹, Ashton Jackson² ¹*Georgia Tech Research Institute, Atlanta, Georgia, United States*; ²*USDA-ARS National Poultry Research Center, Athens, Georgia, United States*
- 6:15 PM 516P **Functionality of liquid smoke fractions as natural antimicrobials against human foodborne and poultry bacterial pathogens**
Tri Duong^{*1}, Chandra Machin², Joseph Toraason¹, Sara Llamas-Moya¹ ¹*Kerry Taste and Nutrition, Beloit, Wisconsin, United States*; ²*Microbial Research, Inc., Fort Collins, Colorado, United States*

- 6:15 PM 517P **Pangenome Analysis Reveals Distinct Evolutionary Clusters and Transmission Patterns of Avian Pathogenic *Escherichia coli***
Linan Jia^{*2}, Xin Ye², Mark A. Arick II³, Chuan-Yu Hsu³, Jeffrey Evans¹, Kelsy Robinson¹, Pratima Adhikari², Ken Macklin², Li Zhang² ¹USDA-ARS, Starkville, Mississippi, United States; ²Mississippi State University, Mississippi State, Mississippi, United States; ³Mississippi State University, Mississippi State, Mississippi, United States
- 6:15 PM 518P **Thymol reduce biofilm formation and inactivate mature biofilm formation of *Salmonella* Infantis**
Geetha Kumar-Philips^{*1}, Komala Arsi², Annie Donoghue² ¹University of Arkansas, Fayetteville, Arkansas, United States; ²Poultry Production and Product Safety Research, Fayetteville, Arkansas, United States
- 6:15 PM 519P **Evaluation of interior quality and microbiological aspects of eggs stored for 28 days at different relative humidity levels**
Ahmet Y. Pekel^{*1}, Alp E. Yildiz², Abdurrahman Kizil¹, Ali Aydin² ¹Istanbul University-Cerrahpasa, Faculty of veterinary Medicine, Istanbul, Avcilar, Turkey; ²Istanbul University-Cerrahpasa, Faculty of Veterinary Medicine, Istanbul, Avcilar, Turkey
- 6:15 PM 520P **Effect of passage of an attenuated phenotype of *Salmonella enterica* serovar Typhimurium through embryos on parameters of virulence**
Inkar Castellanos^{*1}, Danielle Graham¹, Lauren M. Laverty¹, Juan D. Latorre¹, Billy M. Hargis¹ ¹University of Arkansas, Fayetteville, Arkansas, United States
- 6:15 PM 521P **Ultra fine ozone bubble water wash reduces *Salmonella* Enteritidis without negatively impacting meat quality and sensory attributes of chicken breast**
Trushenkumar M. Shah^{*1}, Chetna Shah¹, Ana Leticia De Almeida¹, Tanmaie Kalapala², Sarah E. Johnson², Joaquin J. Esquivel Vergara², Komala Arsi³, Casey M. Owens², Annie Donoghue³, Indu Upadhyaya⁴, Abhinav Upadhyay¹ ¹University of Connecticut, Willington, Connecticut, United States; ²University of Arkansas, Fayetteville, Arkansas, United States; ³Poultry Production and Product Safety Research, Fayetteville, Arkansas, United States; ⁴University of Connecticut, Tolland, Connecticut, United States
- 6:15 PM 522P **Growth performance and breast myopathies in broiler chickens fed different oils**
Byungwhi Kong^{*1}, Janghan Choi¹, Venkata S. Choppa², Doyun Goo², Majid Shakeri¹, Hamidreza R. Naeini², Woo K. Kim², Hong Zhuang¹, Brian Bowker¹ ¹USDA-ARS-USNPRC, Athens, Georgia, United States; ²University of Georgia, Athens, Georgia, United States
- 6:15 PM 523P **Effect of In-Water Supplementation of Trans-Cinnamaldehyde Nanoemulsion in Layer Chickens on Quality and Consumer Acceptability of Eggs**
Trushenkumar M. Shah^{*1}, Chetna Shah¹, Balaji Belore¹, Jodie T. Allen¹, Ana Leticia De Almeida¹, Komala Arsi², Casey M. Owens³, Annie Donoghue², Mary Anne Amalaradjou¹, Indu Upadhyaya⁴, Abhinav Upadhyay¹ ¹University of Connecticut, Storrs, Connecticut, United States; ²Poultry Production and Product Safety Research, Fayetteville, Arkansas, United States; ³University of Arkansas, Fayetteville, Arkansas, United States; ⁴University of Connecticut, S Glastonbury, Connecticut, United States
- 6:15 PM 524P **Reduction of *Salmonella* in Immersion Chillers using Peracetic Acid (PAA) and Sonication**
Daniel Sabo^{*1}, Stephanie Richter² ¹Georgia Tech Research Institute, Atlanta, Georgia, United States; ²Georgia Tech Research Institute, Atlanta, Georgia, United States

ePoster Kiosk Assignments

FINAL ID	CATEGORY	SESSION TITLE	TITLE	PRESENTING AUTHOR	PRESENTER INSTITUTIONS
399P	Student Competition: Animal Well-Being and Behavior	Monday AM Poster Session	Monitoring the Utilization of Ramps by Laying Hens in Cage-Free Environment with Deep Learning	Paneru, Bidur	University of Georgia
400P	Student Competition: Extension and Instruction	Monday AM Poster Session	Leveraging AI-driven sentiment analysis and natural language processing to inform extension efforts in the poultry industry	Mitchell, Ryan	University of Maryland
401P	Student Competition: Genetics and Molecular Biology	Monday AM Poster Session	Elucidate missing CHIR genes on Line-P chickens in previous transcriptomic study using long-read sequencing	Ferrier, Shelby	Western University of Health Sciences
402P	Student Competition: Genetics and Molecular Biology	Monday AM Poster Session	Novel computed tomography (CT) – derived traits in purebred turkeys (Meleagris gallopavo)	Amini, Seyedehbaran	University of Guelph
403P	Student Competition: Genetics and Molecular Biology	Monday AM Poster Session	Effects of in ovo docosahexaenoic acid supplementation on liver and ileum gene expression profiles in broiler chicken embryo	Pandey, Bal Krishna	University of Hawaii at Manoa
404P	Student Competition: Management and Production	Monday AM Poster Session	The effect of blue or white LED lighting, compared to darkness, during simulated chick transport on the welfare and productivity of broilers	McGregor, Deliah	University of Saskatchewan
405P	Student Competition: Management and Production	Monday AM Poster Session	Characterizing Non-Infectious Brooder Mortality: Age of Onset and Patterns in Commercial Turkey Flocks	Flaskey, Phoebe	Iowa State University
406P	Student Competition: Management and Production	Monday AM Poster Session	Growth Performance and Heat Stress in Broiler Birds Reared in an Environmentally Controlled House and on Pasture	Biswas, Biswajit Kumar	Tennessee State University

FINAL ID	CATEGORY	SESSION TITLE	TITLE	PRESENTING AUTHOR	PRESENTER INSTITUTIONS
407P	Student Competition: Physiology and Reproduction	Monday AM Poster Session	Egg Yolk Metabolites as Potential Indicators of Quality	Torretta, Isabela	Federal University of Uberlandia
408P	Student Competition: Physiology and Reproduction	Monday AM Poster Session	Analysis of microbial diversity and metabolic pathways in the chorioallantoic membrane and intestine during the embryonic development	Amaz, Sadid Al	UNIVERSITY OF HAWAII AT MANOA
409P	Student Competition: Physiology and Reproduction	Monday AM Poster Session	RNA sequencing-based analysis of fertility-related markers in the oviduct of broiler breeder hens	Mahato, Prem	University of Hawaii at Manoa
410P	Student Competition: Physiology and Reproduction	Monday AM Poster Session	Age-related changes in the transcriptomic profile related to ovarian follicle recruitment in commercial laying hens	Poudel, Suman	University of Hawaii at Manoa
411P	Student Competition: Immunology, Health and Disease: Feed Additives	Monday PM Poster Session	Impact of low-quality soybean meal and live coccidiosis vaccination on the cecal microbiome composition of broiler chickens	Coles, Mak-enly	University of Arkansas
412P	Student Competition: Immunology, Health and Disease: Feed Additives	Monday PM Poster Session	Feeding Dietary Black Currant Powder to Turkey Hen Poult	Gernat, Ashley	North Carolina State University
413P	Student Competition: Immunology, Health and Disease: Feed Additives	Monday PM Poster Session	Evaluating the Impact of spraying an Enterococcus faecium probiotic at hatch and supplementing feed with a Triple-Strain Bacillus-based additive on BCO Lameness Incidence in Broiler Chickens	Alqahtani, Abdulaziz	University of Arkansas
414P	Student Competition: Immunology, Health and Disease: Health and Disease	Monday PM Poster Session	A machine vision system for detection and classification of poultry manure and disease evaluation	Dhungana, Anjan	The University of Georgia

FINAL ID	CATEGORY	SESSION TITLE	TITLE	PRESENTING AUTHOR	PRESENTER INSTITUTIONS
415P	Student Competition: Immunology, Health and Disease: Health and Disease	Monday PM Poster Session	Plasma proteomic profiling reveals distinct signatures between resistant and susceptible chickens infected with highly pathogenic avian influenza virus	Valdez May, María José	IRTA. Programa de Sanitat Animal. Centre de Recerca en Sanitat Animal (CRESA). Campus de la Universitat Autònoma de Barcelona (UAB); Centre de Recerca en Sanitat Animal (CRESA). Campus de la Universitat Autònoma de Barcelona (UAB)
416P	Student Competition: Immunology, Health and Disease: Health and Disease	Monday PM Poster Session	Phytogetic supplementation modulates performance and pathological responses of turkey poults to histomoniasis induced via lateral transmission of <i>Histomonas meleagridis</i> in battery cages	Niraula, Abhisek	University of Georgia
417P	Student Competition: Immunology, Health and Disease: Health and Disease	Monday PM Poster Session	Transcriptional changes in mucosal and lymphoid immune tissue of broiler chickens during experimental necrotic enteritis	Browning, Matthew	North Carolina State University
418P	Student Competition: Immunology, Health and Disease: Health and Disease	Monday PM Poster Session	Phytogetic blend positively influence the ileal and cecal microbiota during a necrotic enteritis challenge	Ribeiro, Gabriella	University of Georgia
419P	Student Competition: Immunology, Health and Disease: Health and Disease	Monday PM Poster Session	Assessment of neutral buffered formalin as a fixative to preserve <i>Histomonas meleagridis</i> cell morphology	Echevarria, Karen	University of Arkansas

FINAL ID	CATEGORY	SESSION TITLE	TITLE	PRESENTING AUTHOR	PRESENTER INSTITUTIONS
420P	Student Competition: Immunology, Health and Disease: Health and Disease	Monday PM Poster Session	A preliminary evaluation demonstrating the resilience of <i>Histomonas meleagridis</i> when exposed to acidic conditions in vitro	Martinez, Melissa	University of Arkansas
421P	Student Competition: Immunology, Health and Disease: Immunology	Monday PM Poster Session	In vitro evaluation of the effects of a <i>Saccharomyces cerevisiae</i> -based postbiotic on the growth of three <i>Salmonella enterica</i> serotypes	Zarghami Dastjerdi, Paniz	University of Georgia
422P	Student Competition: Immunology, Health and Disease: Immunology	Monday PM Poster Session	Primary vaccination with herpesvirus of turkey (HVT) vaccine stimulated different lymphocyte infiltration profiles in Light-brown Leghorns and scleroderma/systemic sclerosis-expressing UCD200/206 White Leghorns	Bowerman, Allie	University of Arkansas System Division of Agriculture
423P	Student Competition: Immunology, Health and Disease: Immunology	Monday PM Poster Session	Beta-carotene and lipid metabolism as mediators of probiotic-induced immunometabolism modulation	Pen, Tamara	University of Surrey
424P	Animal Well-Being and Behavior	Monday Evening Poster Session #1	Quantitative Gait Properties Associated with Subjective Gait Scores in Male Turkeys Reared with Access to Environmental Enrichment	Kulbacki, Stephanie	University of Georgia
425P	Animal Well-Being and Behavior	Monday Evening Poster Session #1	Don't ruffle their feathers: Isolation in the light and dark has differential effects on vocalizations but minimal effects on brain serotonin activity in neonatal layers or pullets.	von Seggern, Isabella	Purdue University
426P	Animal Well-Being and Behavior	Monday Evening Poster Session #1	Effects of provisioning a moonlight regimen on layer fear and stress susceptibility	Villarreal, Isabella	Texas A&M University
427P	Extension and Instruction	Monday Evening Poster Session #1	Assessing evolving challenges and educational needs in commercial and backyard poultry management	Che, Sunoh	University of Maryland

FINAL ID	CATEGORY	SESSION TITLE	TITLE	PRESENTING AUTHOR	PRESENTER INSTITUTIONS
428P	Genetics & Molecular Biology	Monday Evening Poster Session #1	Mitochondrial calcium overload is associated with the woody breast myopathy in broilers	Greene, Elizabeth	University of Arkansas
429P	Genetics & Molecular Biology	Monday Evening Poster Session #1	Genetic and histopathological characterization of spaghetti meat in broiler chickens	Che, Sunoh	University of Maryland
430P	Genetics & Molecular Biology	Monday Evening Poster Session #1	Effects of Myostatin Mutation on Temporal Expression of Myosin Heavy Chain Isoforms in Skeletal Muscle of Male Japanese Quail	An, Suhyun	The Ohio State University; Kyungpook National University
431P	Genetics & Molecular Biology	Monday Evening Poster Session #1	Heritability and genetic correlation of meat production traits in Mexican Creole chickens	Zárate-Contreras, Diego	Colegio de Postgraduados
432P	Genetics & Molecular Biology	Monday Evening Poster Session #1	Heritability and genetic correlation of egg production traits in Mexican Creole hens	Juárez-Lucas, Alondra	Universidad Autónoma Chapingo
433P	Management and Production	Monday Evening Poster Session #1	Enteric neurochemical responses to heat stress in Pekin ducks are sex- and diet-dependent	Lyte, Joshua	USDA-ARS Poultry Production and Product Safety Research Unit
434P	Management and Production	Monday Evening Poster Session #1	Does exposure to blue light from 0-15 or 0-17 weeks of age affect production and health of egg-laying pullets reared to 17 weeks of age?	Uhren, Zoe	University of Saskatchewan
435P	Management and Production	Monday Evening Poster Session #1	Sustainable pest control: How three pests' insect of poultry farm reacts to a commercial blend of essential oils?	Bui, Hoa	Nor-Feed
436P	Management and Production	Monday Evening Poster Session #1	Play that Funky Music Pekin Ducks Part 1: Effects of Auditory Enrichment on Pekin Duck Welfare	Peterson, Brynn	Purdue University
437P	Management and Production	Monday Evening Poster Session #1	Play that Funky Music Pekin Duck Part 2: Effects of Auditory Enrichment on production variables.	Ayres, Grace	Purdue University

FINAL ID	CATEGORY	SESSION TITLE	TITLE	PRESENTING AUTHOR	PRESENTER INSTITUTIONS
438P	Management and Production	Monday Evening Poster Session #1	Understanding Varying Level of Hydrogen Peroxide Residuals in Poultry Drinking Water in Early Broiler Growth Performance	Biswas, Biswajit Kumar	Tennessee State University
439P	Management and Production	Monday Evening Poster Session #1	Early Non-Destructive Assessment of Broiler Egg Fertility by SBSE/GC×GC-MS Analysis	Song, Xiaojuan (Judy)	Georgia Tech Research Institute
440P	Physiology and Reproduction	Monday Evening Poster Session #1	Parental orange corn diet alleviated glucocorticoid response but did not alleviate the impaired growth or heightened fear caused by parental heat stress exposure in F1 Pekin ducks.	Oluwagbenga, Esther	Purdue University
441P	Physiology and Reproduction	Monday Evening Poster Session #1	Orange corn diet altered serotonin and dopamine activity in the brain while heat stress altered total antioxidant capacity in a sex dependent manner in Pekin ducks	Oluwagbenga, Esther	Purdue University
442P	Physiology and Reproduction	Monday Evening Poster Session #1	Vaginal swab lipid profiles of high and low fertility broiler breeder hens	Hanlon, Charlene	Auburn University
443P	Immunology, Health and Disease: Feed Additives	Monday Evening Poster Session #2	Case Study: Boosting Vaccine Titer Production in Pullets During Stress Periods utilizing PHYTOZEN®	Blue, Candice	Probiotech International Inc.
444P	Immunology, Health and Disease: Feed Additives	Monday Evening Poster Session #2	Effect of dietary inclusion of fermented and non-fermented grape pomace on growth performance and gut function of broilers under chronic inflammation	Sharma, Milan	Cornell University
445P	Immunology, Health and Disease: Feed Additives	Monday Evening Poster Session #2	The effect of Tart Cherry Pit Extract (TCPE), at three inclusion rates in feed or water, on growth performance of 1-to-14-day old broiler chicks	Lavergne, Theresia	Natural Biologics, Inc.
446P	Immunology, Health and Disease: Feed Additives	Monday Evening Poster Session #2	Pilot study: Evaluation of the antiprotozoal activity of phytogetic candidates on Histomonas meleagridis infection in turkeys	Maguey-Gonzalez, Jesus	University of Arkansas

FINAL ID	CATEGORY	SESSION TITLE	TITLE	PRESENTING AUTHOR	PRESENTER INSTITUTIONS
447P	Immunology, Health and Disease: Health and Disease	Monday Evening Poster Session #2	Evaluation of the Effectiveness of the Avisan Secure Vaccine in Controlling Salmonella in a Broiler Breeder Flock	Parvandar Asadollahi, Kaveh	Science and Research Branch, Islamic Azad University, Tehran, IRAN
448P	Immunology, Health and Disease: Health and Disease	Monday Evening Poster Session #2	High Throughput Individualized Vaccination Improves Vaccine Take and Output in Day-Old Chicks	Ngunjiri, John	TARGAN Inc.
449P	Immunology, Health and Disease: Health and Disease	Monday Evening Poster Session #2	Evaluating the Function of pagP in Avian Pathogenic Escherichia coli Pathogenicity Using an Embryo Challenge Model	Fugate, Hailey	Mississippi State University
450P	Immunology, Health and Disease: Health and Disease	Monday Evening Poster Session #2	Molecular characterization of hydrogenosomal iron superoxide dismutase in Histomonas meleagridis	Varnell, Tabitha	Clemson University
451P	Immunology, Health and Disease: Immunology	Monday Evening Poster Session #2	Evaluation of a novel electron beam-inactivated vaccine against avian pathogenic Escherichia coli in chicken	Chowdhury, Monzur	Mississippi State University
452P	Immunology, Health and Disease: Immunology	Monday Evening Poster Session #2	Assessing cell-type population differences in the jejunum of uninfected and coccidia-infected BQ and B19 chickens using spatial and single-cell transcriptomics	Sparling, Brandi	Western University of Health Sciences
453P	Immunology, Health and Disease: Immunology	Monday Evening Poster Session #2	Development and validation of a TaqMan-based multiplex qPCR assay for profiling pro-inflammatory cytokine responses in poultry infected with avian pathogenic Escherichia coli (APEC)	Ye, Xin	Mississippi State University
454P	Metabolism and Nutrition: General Nutrition	Monday Evening Poster Session #2	Comparison of Analytical Methods for Measuring Trypsin Inhibitor Activity in Soybean Products	Wen, Jinlei (James)	Evonik Corporation
455P	Metabolism and Nutrition: General Nutrition	Monday Evening Poster Session #2	Potential of sow spleen as a sustainable immune and growth promoter for young broiler chickens	Liu, Xiaoning	University of Minnesota

FINAL ID	CATEGORY	SESSION TITLE	TITLE	PRESENTING AUTHOR	PRESENTER INSTITUTIONS
456P	Metabolism and Nutrition: General Nutrition	Monday Evening Poster Session #2	Effect of cyclic heat stress and bird strains on performance and egg quality in laying hens	Alabi, Taiwo	University of Kentucky
457P	Metabolism and Nutrition: General Nutrition	Monday Evening Poster Session #2	Flaxseed Oil Improves Growth Performance and Modulates Liver Metabolomics in Broiler Chickens	Fasina, Yewande	North Carolina A&T State University
458P	Metabolism and Nutrition: General Nutrition	Monday Evening Poster Session #2	Influence of the origin of the soybeans on the composition of the carbohydrate fraction of soybeans meal arriving to European ports	Talegón, Guillermo	UPM
459P	Metabolism and Nutrition: General Nutrition	Monday Evening Poster Session #2	Determining the nutrient and anti-nutrient variability in Asia-sourced barley and canola meal	Marshall, Caleb	North Carolina State University
460P	Metabolism and Nutrition: General Nutrition	Monday Evening Poster Session #2	Influence of the metabolizable energy and amino acid content of the diet on growth performance and fecal biomarkers in broilers from 1 to 35 days of age	González Mateos, Gonzalo	UPM
461P	Metabolism and Nutrition: General Nutrition	Monday Evening Poster Session #2	Effect of split feeding on nutrient digestibility in Bovans White laying hens	Zambrano Velasco, Maria Guadalupe	Colegio de Postgraduados
462P	Metabolism and Nutrition: General Nutrition	Monday Evening Poster Session #2	Gompertz-Laird model prediction of optimum utilization of arginine by the French Guinea fowl broilers	Nahashon, Samuel	Tennessee State University
463P	Student Competition: Metabolism and Nutrition: Enzymes	Tuesday AM Poster Session	The effects of feeding a xylanase – beta-glucanase combination on growth performance and energy efficiency in broilers fed a complex diet	Jiral, Emily	Texas A&M University
464P	Student Competition: Metabolism and Nutrition: Feed Additives	Tuesday AM Poster Session	Evaluating the Impact of a Novel Inulin Product on 21 Day Broiler Performance	Magee, Emily	Mississippi State University

FINAL ID	CATEGORY	SESSION TITLE	TITLE	PRESENTING AUTHOR	PRESENTER INSTITUTIONS
465P	Student Competition: Metabolism and Nutrition: Feed Additives	Tuesday AM Poster Session	Evaluation of supplementing different phytogetic substances on broiler growth and gut health to 35 days of age	Allensworth, Colby	Texas A&M University
466P	Student Competition: Metabolism and Nutrition: Feed Additives	Tuesday AM Poster Session	Impact of Iron Supplement SQM® on Microbiome Composition and Vaccination Efficacy Against Non-typhoidal Salmonella enterica in Ross 708 Broilers	Ager, Eldon	University of Wisconsin-Madison
467P	Student Competition: Metabolism and Nutrition: General Nutrition	Tuesday AM Poster Session	Performance impacts of dietary energy in a laying hen strain at late phase of production	Pory, Faija	Tennessee State University
468P	Student Competition: Metabolism and Nutrition: General Nutrition	Tuesday AM Poster Session	Determination of TMEn, standardized amino acid digestibility and trypsin inhibitor activity in new reduced trypsin inhibitor varieties of soybeans	Rosales, Saul	University of Illinois Urbana-Champaign
469P	Student Competition: Metabolism and Nutrition: General Nutrition	Tuesday AM Poster Session	Feeding live black soldier fly larvae (<i>Hermetia illucens</i>) affects fatty acid composition in egg yolk of lohman brown laying hens	Stöhr, Nathalie	University of Applied Sciences Bingen; Institute of Animal Science, Farm Animal Ethology; University of Hawaii at Manoa
470P	Student Competition: Metabolism and Nutrition: General Nutrition	Tuesday AM Poster Session	Determination of TMEn and standardized amino acid digestibility in high-oil corn fed to chickens	Mallea Ortiz, Andrea Paola	University of Illinois
471P	Student Competition: Metabolism and Nutrition: General Nutrition	Tuesday AM Poster Session	Effects of in ovo docosa-hexaenoic acid supplementation injection on muscle proliferation and antioxidant gene expression in the embryo of broiler chickens	Burlakoti, Suresh	University of Hawaii at Manoa

FINAL ID	CATEGORY	SESSION TITLE	TITLE	PRESENTING AUTHOR	PRESENTER INSTITUTIONS
472P	Student Competition: Metabolism and Nutrition: General Nutrition	Tuesday AM Poster Session	Impact of varying corn particle size and feed quality during the finisher phase (d 27-35) with and without a subclinical necrotic enteritis challenge on broiler gastrointestinal measurements challenged with a 10x live coccidiosis vaccine	Parks, Kendall	Mississippi State University
473P	Student Competition: Metabolism and Nutrition: General Nutrition	Tuesday AM Poster Session	Fast-growing broilers pair-fed to slow-growing broilers to investigate the effect of feed intake on breast meat quality and oxidant markers	Lott, Elizabeth	The Ohio State University
474P	Student Competition: Metabolism and Nutrition: Vitamins and Minerals	Tuesday AM Poster Session	Comparison of Ca Bioavailability Based on Tibia Bone Ash and Apparent Ileal Ca Digestibility in CaCO ₃ With and Without MgO Supplementation	Hufford, Seth	University of Arkansas
475P	Student Competition: Metabolism and Nutrition: Vitamins and Minerals	Tuesday AM Poster Session	Evaluation of dietary zinc and manganese source and level on the performance and yield of Ross 708 broilers processed at 8 weeks of age	Beckman, Nelsa	Auburn University
476P	Student Competition: Metabolism and Nutrition: Vitamins and Minerals	Tuesday AM Poster Session	Dose response of novel calcium supplement source in broiler pens	Soltis, Hallie	The Ohio State University
477P	Student Competition: Microbiology and Food Safety	Tuesday PM Poster Session	Genomic characterization of bacterial isolates from broiler chicken cecal microbiota	Wang, Man-hong	Mississippi State University
478P	Student Competition: Microbiology and Food Safety	Tuesday PM Poster Session	Surveillance of antibiotic-resistant Salmonella and Campylobacter in turkey carcass rinses across the United States	Turna, Afrina Akter	University of Arkansas System Division of Agriculture

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479P	Student Competition: Microbiology and Food Safety	Tuesday PM Poster Session	Comparing the effects of <i>Propionibacterium freudenreichii</i> and <i>Salmonella Typhimurium</i> vaccine on cecal colonization, internal organ dissemination, and cecal microbial populations in <i>Salmonella</i> Infantis-infected broiler chickens	MURINGATTU PRABHAKARAN, DHANANJAI	UNIVERSITY OF MINNESOTA
480P	Student Competition: Microbiology and Food Safety	Tuesday PM Poster Session	Effect of eugenol nanoemulsion in inactivating <i>Salmonella</i> Enteritidis survival on broiler chicken skin during refrigerated storage	Allen, Jodie	University of Connecticut
481P	Student Competition: Microbiology and Food Safety	Tuesday PM Poster Session	Evaluation of the <i>Enterococcus cecorum</i> inhibitory effect of cell-free supernatants obtained from different <i>Bacillus</i> spp. using an in vitro inhibition assay	Cortes, Diego	University of Arkansas
482P	Student Competition: Microbiology and Food Safety	Tuesday PM Poster Session	Population and prevalence of <i>Salmonella</i> : A Comparison between conventional floor-pen and silvopasture housing systems in fast and slow-growing broiler birds.	Tahir, Yabaiz	North Carolina State University
483P	Student Competition: Microbiology and Food Safety	Tuesday PM Poster Session	Recovery of salmonellae from chicken enteroids, with or without D-mannose medium treatment	Laverty, Lauren	University of Arkansas
484P	Student Competition: Microbiology and Food Safety	Tuesday PM Poster Session	Construction and characterization of bioluminescent avian pathogenic <i>Escherichia coli</i> (APEC) strain to understand the pathogenesis of colibacillosis in poultry	Guardado, Carlos	Mississippi State University
485P	Student Competition: Processing and Products	Tuesday PM Poster Session	Inspiring future engineers in next generation poultry processing	Hou, Jenny	Georgia Tech Research Institute; Georgia Institute of Technology
486P	Student Competition: Processing and Products	Tuesday PM Poster Session	The Use of Peracetic Acid (PAA) in Dip Application on Broiler Breast Fillet Meat Quality	Hanning, Adalyn	University of Arkansas; Har-Ber High School

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487P	Student Competition: Processing and Products	Tuesday PM Poster Session	Consideration of multiple feed additives trials and the impact on woody breast frequency	Charles, Krystell	Mississippi State University
488P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	Effects of Betaine supplementation on growth performance, nutrient digestibility, egg quality, water loss, gas emissions, and blood profile in laying hens under heat stress	Jang, Se Yeon	Dankook University; Smart AnimalBio Institute
489P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	Impact of <i>Pediacoccus acidilactici</i> CNCM I-4622 supplementation on reproductive performance in commercial turkey breeders	Sobotik, Eric	RSM Consulting LLC
490P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	Microbial supplementation in turkey production: three decades of practical applications and key learnings	Sobotik, Eric	RSM Consulting LLC
491P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	The effect of pigment saponification and dispersing agent on egg yolk pigmentation	Pham, Thoai	Kemin Industries
492P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	Assessing brown and white mushroom stem powders as sustainable substitutes for soybean meal in poultry nutrition	Abdel-Wareth, Ahmed	Prairie View A&M University, Texas
493P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	<i>Spirulina platensis</i> supplementation reshapes gut microbiota and functional metabolic pathways in laying hens	Salahuddin, Md	Prairie View A&M University, Texas
494P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	Evaluation of organic KEM GLO™ product in laying hen diet	Tran, Helen	Kemin Inc
495P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	Evaluating the effects of a blend of short- and medium-chain monoglycerides on intestinal functions using an apical-out chicken enteroids model	Liu, Jundi	Eastman Chemical Company

FINAL ID	CATEGORY	SESSION TITLE	TITLE	PRESENTING AUTHOR	PRESENTER INSTITUTIONS
496P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	The effects of supplementing a bacterial xylanase and a multi-component protease on growth performance, fermentation metabolites, and economic benefits in broiler chickens	Babatunde, Olufemi	Jefo Nutrition Inc.
497P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	Effects of Trisetum flavescens Extract in Feed on Production Performance and Eggshell Quality of Laying Hens at 94 Weeks of Age	Souza, Cleverson	Phytobiotics
498P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	Does Butyric Acid Enhance the Effects of a Blend of Organic Acid and Essential Oil Blends? Findings in Broilers Facing a Gut Challenge	Stefanello, Thais	Jefo Nutrition Inc.
499P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	Are all "total polyphenols" really the same? A comparative study of two sources of polyphenols on the antioxidant defenses in broiler chickens	Benarbia, Amine	Nor-Feed
500P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	Effect of a natural phosphatidylcholine source on layers' performance and egg composition	Gonzalez, Javier	Nuproxa Switzerland Ltd.
501P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	Effect of corn particle size and essential oils on broiler live performance, digesta retention time, and meat quality of broiler chickens	Nusairat, Basheer	Jordan University of Science and Technology
502P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	Supplementation of organic trace minerals and prebiotics in broiler diets with varying levels of soy	Soto, Jose	Alltech
503P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	In ovo docosahexaenoic acid supplementation and its effects on serotonin and neuropeptide Y-related genes during chicken embryogenesis	Katsumata, Sachi	Okayama University; University of Hawaii at Manoa

FINAL ID	CATEGORY	SESSION TITLE	TITLE	PRESENTING AUTHOR	PRESENTER INSTITUTIONS
504P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	Effect of feeding a novel phytogetic feed additive on growth performance and clinical outcomes of broilers administered a mixed Eimeria spp. challenge	Metz, Mickie	Land O Lakes
505P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	The effect of feeding new Bacillus probiotic strains on the growth of Ross 708 male broilers	Flores, Abigail	Texas A&M University
506P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	Prolonged Subinhibitory Exposure to a Phytogetic Feed Additive Does Not Induce Resistance in Escherichia coli Strains	Wagner, Ashley	PROBIO-TECH International Inc.
507P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	Bile acids improve energy digestibility in broilers	AMORIM, BRUNO	MCASSAB
508P	Metabolism and Nutrition: Feed Additives	Tuesday Evening Poster Session #1	Effect of prebiotic and organic acid supplementation on productive performance, carcass yield and skin pigmentation of broiler chickens	Pacheco-Hernandez, Cesar	Universidad Autónoma Chapingo
509P	Metabolism and Nutrition: Enzymes	Tuesday Evening Poster Session #2	A multicomponent protease improves the productive performance of laying hens reared in high temperature and humidity conditions	Stefanello, Thais	Jejo Nutrition Inc.
510P	Metabolism and Nutrition: Amino Acids	Tuesday Evening Poster Session #2	Effects of a low crude protein amino acid-balanced diet on performance, egg quality, nutrient digestibility, and gas emissions in Hy-line brown laying hens	Lee, KyeJin	Dankook University; Smart AnimalBio Institute
511P	Metabolism and Nutrition: Vitamins and Minerals	Tuesday Evening Poster Session #2	In ovo supplementation of combined chelated minerals (Zn, Fe, & Mn) enhances chicken embryonic development and nutrient absorption, and modulates immune and antioxidant responses	Yitbarek, Alexander	University of Delaware
512P	Metabolism and Nutrition: Vitamins and Minerals	Tuesday Evening Poster Session #2	Niacin supplementation effects on broiler growth performance	Wilson, Victoria	Kansas State University

FINAL ID	CATEGORY	SESSION TITLE	TITLE	PRESENTING AUTHOR	PRESENTER INSTITUTIONS
513P	Microbiology and Food Safety	Tuesday Evening Poster Session #2	Prevalence, serotyping and antimicrobial resistance analysis of Salmonella isolated from the pastured poultry farm	Kim, Minho	USDA-ARS
514P	Microbiology and Food Safety	Tuesday Evening Poster Session #2	Synbiotic nutritional additives reduce in vitro growth of avian pathogenic E.coli (APEC)	Nolan, Lauren	Alltech Global Headquarters
515P	Microbiology and Food Safety	Tuesday Evening Poster Session #2	Microbial Volatile Organic Compounds (mVOCs) as Early Indicators of Contamination during Incubation of SPF White Leghorn Eggs	Richter, Stephanie	Georgia Tech Research Institute
516P	Microbiology and Food Safety	Tuesday Evening Poster Session #2	Functionality of liquid smoke fractions as natural antimicrobials against human foodborne and poultry bacterial pathogens	Duong, Tri	Kerry Taste and Nutrition
517P	Microbiology and Food Safety	Tuesday Evening Poster Session #2	Pangenome Analysis Reveals Distinct Evolutionary Clusters and Transmission Patterns of Avian Pathogenic Escherichia coli	Jia, Linan	Mississippi State University
518P	Microbiology and Food Safety	Tuesday Evening Poster Session #2	Thymol reduce biofilm formation and inactivate mature biofilm formation of Salmonella Infantis	Kumar-Philips, Geetha	University of Arkansas
519P	Microbiology and Food Safety	Tuesday Evening Poster Session #2	Evaluation of interior quality and microbiological aspects of eggs stored for 28 days at different relative humidity levels	Pekel, Ahmet	Istanbul University-Cerrahpasa, Faculty of veterinary Medicine
520P	Microbiology and Food Safety	Tuesday Evening Poster Session #2	Effect of passage of an attenuated phenotype of Salmonella enterica serovar Typhimurium through embryos on parameters of virulence	Castellanos, Inkar	University of Arkansas
521P	Microbiology and Food Safety	Tuesday Evening Poster Session #2	Ultra fine ozone bubble water wash reduces Salmonella Enteritidis without negatively impacting meat quality and sensory attributes of chicken breast	Shah, Trushenkumar	University of Connecticut

FINAL ID	CATEGORY	SESSION TITLE	TITLE	PRESENTING AUTHOR	PRESENTER INSTITUTIONS
522P	Processing and Products	Tuesday Evening Poster Session #2	Growth performance and breast myopathies in broiler chickens fed different oils	Kong, Byung-whi	US-DA-ARS-US-NPRC
523P	Processing and Products	Tuesday Evening Poster Session #2	Effect of In-Water Supplementation of Trans-Cinnamaldehyde Nanoemulsion in Layer Chickens on Quality and Consumer Acceptability of Eggs	Shah, Trushenkumar	University of Connecticut
524P	Processing and Products	Tuesday Evening Poster Session #2	Reduction of Salmonella in Immersion Chillers using Peracetic Acid (PAA) and Sonication	Sabo, Daniel	Georgia Tech Research Institute
525P	Processing and Products	Tuesday Evening Poster Session #2	Effects of duck breeds and chicken production types on egg quality characteristics through fourteen days of egg storage	Hughes, Matthew	Auburn University
526P	Processing and Products	Tuesday Evening Poster Session #2	Field Test Study of Prechiller Dwell Time Variance	Giorges, Aklilu	Georgia Tech Research Institute

Poultry Science Association Awards & Honors



Award Sponsors

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PSA Foundation Travel Awards

The Association extends its thanks to the PSA Foundation for providing \$25,000 in funding towards the 2025 Student Travel Awards. Recipients of the Student Travel Awards have been contacted and will be announced during the awards celebration. Futhermore, additional funding was made available through the Foundation to support the attendance of international faculty at the 2025 PSA Annual Meeting.

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Poultry Science Association Awards & Honors



Fellow of the Poultry Science Association

The status of Fellow is one of the highest distinctions a PSA member can achieve. The election to Fellow recognizes members of the Poultry Science Association for professional distinction and contributions to the field of poultry science and service.



Kenneth Koelkebeck
University of Illinois

Kenneth W. Koelkebeck received his B.S. degree in General Agriculture (1976) and an M.S. degree in Poultry Science (1980) from the University of Missouri-Columbia. He received his Ph.D. degree in Poultry Science from Texas A&M University in 1984. In 1986, he joined the faculty in the Department of Animal Sciences at the University of Hawaii as a Poultry Extension Specialist. Then, he took

the same position in the Department of Animal Sciences at the University of Illinois at Urbana-Champaign in 1987. He retired from the Department of Animal Sciences in 2022 where he was a Professor and Poultry Extension Specialist. His academic appointment was 60% Extension, 25% Research, and 15% Teaching. During his tenure at Illinois, Dr. Koelkebeck provided extension programs aimed at delivering extension educational information in the areas of poultry production, environmental management, waste management, nutrition, and biosecurity for small flock and commercial poultry producers. Some of the major extension programs that he was involved in, was coordinating the Multi-State Poultry Feeding and Nutrition Conference, co-coordinating the educational program at the Midwest Poultry Federation (MPF) Convention, and he was Superintendent of the National 4-H Poultry and Egg Conference. Dr. Koelkebeck is engaged in these two last activities today. Dr. Koelkebeck has served on several committees for the Poultry Science Association. He was a section editor for JAPR from 2004-2013 and serves in that capacity today. During his academic career, Dr. Koelkebeck authored or co-authored 50 peer-reviewed journal articles, 72 abstracts, 72 conference proceedings, 105 popular press articles, and 80 news releases. He also presented invited talks at 41 national and 5 international conferences and gave 7 national and 52 state presentations.

Poultry Science Association Awards & Honors



Fellow of the Poultry Science Association



Randolph Mitchell

Perdue Farms Inc.

Randy Mitchell is a native of Georgia and earned all three of his academic degrees in the Department of Poultry Science at the University of Georgia. He later earned an MBA at Salisbury University, Salisbury, Maryland. He joined British United Turkeys in 1995, first as a Technical Service Nutritionist (1995-97) and subsequently Manager of Research and Development (1997-98). He joined Perdue Foods in 1998 and has assumed positions with increasing responsibility through to the present: Nutrition/Research Manager (1998-2006); Director of Nutrition (2006-2012); Vice-President of Technical Service (2012-2023); VicePresident of Nutrition and Research (2023-present). In his current position he is responsible for Perdue's overall nutrition program (broilers, breeders, turkeys); in house and field research including nutrition, welfare, and production management; overall feed mill QC; and all analytical services. Perdue Foods has been very proactive in aligning their nutrition and production practices in accordance with ever evolving consumer expectations of how poultry should be raised. These innovative responses include such practices as "no antibiotics ever" and "all vegetable" feeding programs, the potential application of "on farm hatching" to commercial broiler farms and field research on the use of enrichments and windows versus standard dark-out rearing on broiler welfare metrics (> 500 paired-house studies). Dr. Mitchell has had input and/or responsibility for many of the above production endeavors and has received Perdue Excellence Awards in turkey live production (2001; 2007), customer service (2010) and business improvement (2023).

Even with the increased responsibilities he has assumed at Perdue Foods, Randy has remained committed to outside engagement with the wider broiler and turkey industries and the Poultry Science Association. He has been a long-term member of an Animal Nutrition Research Group (2008 - present) that advises the United Soybean Board on soybean meal use for animal diets. He has also been actively engaged with regional industry associations (Maryland Feed Industry Council, President – 2002; Delmarva Poultry Industry Board of Directors, 2012 - 2022). In this regard, his hands on experiences within Perdue Foods and extensive industry relationships have served the Poultry Science Association well during Dr. Mitchell's time as both a Director (2007-2010) and member of the Executive Committee of the PSA Board of Directors.

Poultry Science Association Awards & Honors



American Egg Board Research Award

The American Egg Board Research Award is given to the recipient who has increased the interest in research pertaining to all things related to egg. This could include areas related to egg production, safety, product quality, or egg science technology. This is an annual award.



Lilong Chai
University of Georgia

AFIA Poultry Nutrition Award

This award is given to recognize distinctive work demonstrating sound research in poultry nutrition in the last 10 years. This is an annual award.



Oluyinka Olukosi
University of Georgia

Poultry Science Association Awards & Honors



Arm & Hammer Animal and Food Production Safety Award:

This award is given to stimulate and reward research in the field of poultry (chicken, turkeys and eggs) pre- and post-harvest food safety. Nominee's research should exhibit a sustained impact on decreasing pathogenic organisms in pre- and post-harvest situations.



Steven C. Ricke
University of Wisconsin

Evonik Award for Achievement in Poultry Science

This Evonik Corporation award is an annual award given as an achievement award, i.e., for distinctive contributions to poultry science advancement, covering a period of not more than seven years preceding the annual award.



Elijah Kiarie
University of Guelph

Poultry Science Association Awards & Honors



Maple Leaf Farms Duck Research Award

The purpose of this award is to stimulate and reward research with ducks and improve the knowledge base of science as applied to commercial duck production.



Hector E. Leyva-Jimenez
United Animal Health Inc.

National Chicken Council Broiler Research Award

The National Chicken Council Broiler Research Award recognizes distinctive research work that has had strong economic impact on the broiler industry.



Rami A. Dalloul
University of Georgia

Poultry Science Association Awards & Honors



Novus International Teaching Award

This award is given to recognize that excellence in teaching is basic to the future welfare of the poultry industry and to aid continued professional improvement through travel, study, and other means. This is an annual award.



Pratima Adhikari
Mississippi State University

Phibro Extension Award

This award is given to recognize PSA members for conducting an outstanding program of work in the area of poultry extension and outreach during a five-year period. This is an annual award.



Gregory S. Archer
Texas A&M University

Poultry Science Association Awards & Honors



PSA Early Achievement Award for Extention

The purpose of this award is to recognize the achievements of a PSA member in the early stages of his/her career in extension.



Indu Upadhyaya
University of Connecticut

PSA Early Achievement Award for Industry

This award is to recognize the achievements of a PSA member in the early stages of his/her career in the poultry science industry.



Ariel Bergeron
Adisseo USA Inc.

Poultry Science Association Awards & Honors



PSA Pathfinder Award

The Pathfinder Award specifically recognizes an individual for significant, influential contributions to the promotion and evolution of poultry science as a discipline and a profession. Award recipients are individuals holding long-term Poultry Science Association membership who have impacted poultry science through exemplary work encompassing multiple areas.



Robert L. Taylor
West Virginia University

The James H. Denton Distinguished Service Award of the Poultry Science

The James H. Denton Distinguished Service Award specifically recognizes and focuses on 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.



Tom E. Porter
University of Maryland

Poultry Science Association Awards & Honors



Tyson Foods Inc. Support Personnel Award

This award acknowledges the contributions by support personnel and to recognize outstanding support of research, extension or teaching programs in poultry science. This is an annual award.



Stephen Kirk
Auburn University

USPOULTRY Distinguished Poultry Industry Career Award

This award recognizes distinctive outstanding contributions by an industry leader or leaders based upon a broad, even nonscientific, contribution to the poultry industry.



Petek Setter
Hy-Line International

Poultry Science Association Awards & Honors



PSA Student Recruitment Award

The purpose of this award is to recognize an individual who, through the use of innovative methods, has significantly improved the recruiting program at a representative department, college, or university.



Lesley Gleason
Texas A&M University

Poultry Science Association Awards & Honors



Alltech Student Research Manuscript Award

This award is 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*.



Andi Asnayanti
University of Arkansas

Maurice Stein Fellowship Award

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



Jo Ann Chew
University of Alberta

Poultry Science Association Foundation Awards & Honors



Andrew F. Giesen III Poultry Science Undergraduate Internship Award

2025 Recipients

Daniel Eyre

Pennsylvania State University

Pradeep Chaudhary

Bangladesh Agricultural University

Zinpro Corporation's Undergraduate Poultry Science Scholarship Award

2025 Recipient

Jenna Boewe

Purdue University

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Chad Gregory, UEP Representative (ex officio), non-voting
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Michael E. Persia (2026) FASS/AFIA Award Committee
Douglas R. Korver (2027) FASS/AFIA Award Committee
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Jessica B. Wells, Extension and Instruction
Monika Proszkowiec-Weglarz, Genetics and Molecular Biology
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Lisa R. Bielke, Immunology, Health and Disease (Health and Disease)
Jarred Oxford, Immunology, Health and Disease (Immunology)
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Roshan Adhikari, Metabolism and Nutrition (Amino Acids)
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Cristiano Bortoluzzi, Metabolism and Nutrition (Feed Additives)
Chongxiao (Sean) Chen, Metabolism and Nutrition (General Nutrition)
Pratima Adhikari, Metabolism and Nutrition (Vitamins and Minerals)
Michael Rothrock, Microbiology and Food Safety
Charlene Hanlon, Physiology and Reproduction
Tomi Obe, Processing and Products
Douglas R. Korver, Informal Nutrition Symposium
Zachary T. Williams, National Extension Workshop
Robert C. Van Wyhe and
Bruce M. Rathgeber, WPSA Lectureship
Elijah Kiaire, Student Competition
Martin J. Zuidhof, PSA President (ex officio)

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Birenda Mishra (July 2026), PSA Appointment
Lisa R. Bielke (January 2027), PSA Foundation Representative
Andrea Rubio (July 2028), PSA Appointment
Brian D. Fairchild, for PSA President (ex officio), Board Liaison

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Ali Nazmi (2027)
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Michael H. Kogut, (ex officio), voting (Alltech Award only)
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Kayla R. Price, Alltech Representative, non-voting
Marisa Erasmus, Board Liaison

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Sally Noll (2026)
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Valerie L. Carney (2029)
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Jianmin Yuan (2027)
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Andy Vance, Executive Director (ex officio)

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Jung Min (Jerry) Heo (2027)
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Ahmed Abdel-Wareth (2027)
Samiru S. Wickramasuriya (2027)
Lindy Froebel, National Turkey Federation Representative, voting
Zachary S. Tucker, Maple Leaf Farms Representative, voting
Karen D. Christensen, Board Liaison

PSA Officers, Directors & Committees

National Chicken Council Broiler Research Award Committee

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Elected Dawn Koltes (2027), Elected

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Section Editors:

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and Michael J. Toscano (2026)

Genetics and Molecular Biology: Sami Dridi (2026)

and Monika Proszkowiec-Weglarz (2027)

Immunology, Health, and Disease: Cristiano Bortoluzzi (2025), Alexander B. Yitbarek (2025), Khaled Abdelaziz (2027), Rami A. Dalloul (2027) and Viera Karaffova (2027)

Management and Production: Gregory S. Fraley (2027)

Metabolism and Nutrition: Rajesh Jha (2025), Elijah Kiarie (2025), Olayiwola Adeola (2026), Michael R. Bedford (2027) and Oluyinka A. Olukosi (2027)

Microbiology and Food Safety: J. Allen Byrd II (2025), Kenneth J. Genovese (2027) and Donald R. McIntyre (2027)

Physiology and Reproduction: Mariano Fernandez Miyakawa (2025) and Woo Kyun Kim (2026)

Processing and Products: Mary Anne Amalaradjou (2026)

Publication Committee for The Journal of Applied Poultry Research

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Microbiology and Food Safety: Aaron Kiess (2027)

Nutrition: Milan Hruby (2026), John W. Boney (2027) and Michael E. Persia (2027)

Specialty Markets and Production Systems: Julie K. Northcutt (2025)

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PSA Officers, Directors & Committees

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Timothy Boltz (2026)

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Hongjian Lin (2027)

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Mary M. Beck

World's Poultry Science Association (Canada Branch)

Bruce M. Rathgeber

Notes

Name: _____

E-mail: _____



PSA 2025 ANNUAL MEETING SCAVENGER HUNT

One of the WPSA Lecture chairs:	Meet a fellow! Fellow's signature*:	PSA staff shirt colour on Monday:	PSA Conference in Minneapolis, MN:
Location of BBQ:	Job hunting chicken's name:	434P 2 nd word:	Pacific Rim Conference:

Guest impersonator at last year's Annual Meeting:	This exhibitor has partnered with PSA for over 30 years! Signature:	 Dates:	Congratulate a 2025 award winner! Awardee signature*:

Thank PSA staff for their hard work! Staff signature*:	This statistical software firm is based in NC. Draw the logo.	Selfie: someone with poultry themed clothing /accessories*. (Show photo at submission.)	Informal Nutrition Symposium Meeting Room:
Executive board member's signature*:	There are chickens in this program book! List 3 pages:	Happy upcoming Retirement to this PSA staffer!	Prominently featured outside meeting space:

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

How to play: Fill in all boxes. Some of these are interactive! You will need to visit a location or interact with one another!

Turn in your completed sheet at the registration desk on Thursday, July 17 between 8am and 3pm for your chance at 1 of the 3 prizes!

- 1st place: free registration and BBQ ticket for the 2026 PSA Annual Meeting
 - 2nd place: free registration for the 2026 PSA Annual Meeting
 - 3rd place: free BBQ ticket for the 2026 PSA Annual Meeting
- Winners will be drawn and notified after the deadline.

Notes