



Program

Sunday, November 10

5:00 PM–7:00 PM Registration: Ballpark Registration Desk

Monday, November 11

8:00 AM–9:00 AM Breakfast: Lindberg Room

8:00 AM–4:30 PM Registration: Grand Foyer

SESSION 1

Chair: Brian Aldridge, Clemson University
Ballpark I and II

9:00 AM **Late weaning is associated with decreased abundance of *Enterobacteriaceae* and antimicrobial resistance transfer in the cecal contents of pigs.**
C. Anderson*¹, J. Wiarda², and C. Loving¹, ¹Food Safety and Enteric Pathogens Research Unit, National Animal Disease Center, Agricultural Research Service, United States Department of Agriculture, Ames, IA, USA, ²Virus and Prion Research Unit, National Animal Disease Center, Agricultural Research Service, United States Department of Agriculture, Ames, IA, USA.

9:30 AM **Characterization of bacterial microbiomes according to the fecal phenotype in piglets before and after weaning.**
C. Vaggi*^{1,2}, J. C. Vötterl^{1,2}, F. Lerch^{1,2}, F. Yosi^{2,3}, S. Ricci^{2,4}, D. Verhovsek⁵, and B. U. Metzler-Zebeli^{1,2}, ¹Centre for Veterinary Systems Transformation and Sustainability, University of Veterinary Medicine Vienna, Vienna, Austria, ²Christian Doppler Laboratory for Lab Innovative Gut Health Concepts of Livestock, University of Veterinary Medicine Vienna, Vienna, Austria, ³Department of Animal Science, Faculty of Agriculture, University of Sriwijaya, Palembang, South Sumatra, Indonesia, ⁴Centre for Animal Nutrition and Welfare, University of Veterinary Medicine Vienna, Vienna, Austria, ⁵Clinical Centre for Population medicine in Fish, Pig and Poultry, University of Veterinary Medicine Vienna, Vienna, Austria.

10:00 AM **Characterization of regional differences in neonatal calf gut-associated lymphoid tissues using high-resolution snRNA-sequencing.**
M. Donia*^{1,2}, B. Aldridge³, J. Lowe¹, and W. Li⁴, ¹Department of Pathobiology, College of Veterinary Medicine, University of Illinois, Urbana-Champaign, IL, USA, ²Department of Internal Medicine, Kafrelsheikh University, Kafrelsheikh, Egypt, ³Department of Veterinary Medical Sciences, College of Veterinary Medicine, Clemson University, Clemson, SC, USA, ⁴US Dairy Forage Research Center, USDA-Agricultural Research Service, Madison, WI, USA.

10:30 AM Coffee Break: Ballpark Foyer
Sponsored by Innovad

11:00 AM **Functional and structural characterization of the enteric nervous system in broiler chickens: The inner intestinal barrier of defense against foodborne pathogens.**
V. Caputi*, A. M. Donoghue, and J. M. Lyte, *Poultry Production and Product Safety Research, USDA-ARS, Fayetteville, AR, USA.*

12:00 PM–1:30 PM Lunch: Lindberg Room



Poster Session

- 92720 **Effect of *Salmonella enteritidis* challenge on the microbiome of 54- to 56-week-old layers.**
T. Lavergne*¹, C. Elrod¹, and M. Nascimento², ¹*Natural Biologics, Inc., Newfield, NY, USA*, ²*Sapiens, Jundiai, Sao Paulo, Brazil.*
- 92713 **Deficiency in nitro-detoxification may limit *Salmonella* survivability in macrophages.**
A. Ingram¹, C. Johnson², N. Mast¹, R. Anderson*², and R. Arsenault², ¹*Department of Animal Science and Veterinary Technology, Texas A&M University-Kingsville, Kingsville, TX, USA*, ²*United States Department of Agriculture/Agricultural Research Service, Southern Plains Agricultural Research Center, Food and Feed Safety Research Unit, College Station, TX, USA.*
- 92733 **Impact of heat stress on intestinal barrier integrity in broilers: A comparison of low- and high-water efficient lines.**
M. F. Cuadrado*¹, B. Roach², E. S. Greene¹, K. R. Lassiter¹, W. G. Bottje¹, S. K. Orlowski-Workman¹, and S. Dridi¹, ¹*University of Arkansas, Poultry Science, Fayetteville, AR, USA*, ²*Har-Ber High School, Springdale, AR, USA.*
- 92704 **Standardization of methodologies in poultry microbiome research: One year of progress.**
J. Lyte*¹, D. Ayala², J. De Oliveira³, S. Dridi⁴, D. Grum², T. Johnson⁵, J. Kers⁶, M. Kogut⁷, J. Rehberger⁸, M. Seyoum⁴, A. Smith⁸, G. Zhang⁹, and M. Proskowiec-Weglarz¹⁰, ¹*USDA-ARS, Fayetteville, AR, USA*, ²*Purina Land O'Lakes, Gray Summit, MO, USA*, ³*Cargill, Vilvoorde, Belgium*, ⁴*University of Arkansas, Fayetteville, AR, USA*, ⁵*University of Minnesota, Saint Paul, MN, USA*, ⁶*Utrecht University, Utrecht, the Netherlands*, ⁷*USDA-ARS, College Station, TX, USA*, ⁸*Arm & Hammer Animal Nutrition, Waukesha, WI, USA*, ⁹*Oklahoma State University, Stillwater, OK, USA*, ¹⁰*USDA-ARS, Beltsville, MD, USA.*
- 92716 **Effects of a stimbiotic on nutrient digestibility, oocyst shedding, blood profiles, intestinal gene expression of tight junction protein, and cecal microbiota in necrotic enteritis-challenged broilers.**
H. Kim*, S. Chang, D. Song, K. Jeon, and J. Cho, *Chungbuk National University, Cheong ju, Chungcheongbuk-do, Korea.*
- 92738 **Subclinical exposure to multiple mycotoxins causes cecal microbiota dysbiosis in broiler chickens.**
L. Kappari¹, J. Lourenco², T. Applegate¹, A. Glenn³, and R. Shanmugasundaram*³, ¹*Department of Poultry Science, University of Georgia, Athens, GA, USA*, ²*Department of Animal and Dairy Science, University of Georgia, Athens, GA, USA*, ³*Toxicology and Mycotoxin Research Unit, US National Poultry Research Center, Agricultural Research Service, US Department of Agriculture, Athens, GA, USA.*
- 92728 **Effect of yeast fermentate on rumen microbiota and gas emissions in an in vitro model.**
E. G. Olson*¹, A. Rodrigues¹, I. Ferreira¹, A. Scheaffer², and S. C. Ricke¹, ¹*University of Wisconsin–Madison, Madison, WI, USA*, ²*SweetPro, Wahalla, ND, USA.*
- 92731 **Effects of feeding cashew nutshell liquid on rumen fermentation characteristics and methane emission in Japanese Black beef cattle (Wagyu).**
Y. Uyeno*¹, Y. Sakai², T. Abe³, K. Takahashi⁴, T. Kuramoto⁵, and H. Iwata⁵, ¹*Shinshu University, Minamiminowa, Nagano, Japan*, ²*Japan Cattle Industry Cooperative, Tokyo, Japan*, ³*National Livestock Breeding Center, Nishigo, Fukushima, Japan*,



⁴SDS Biotech K.K., Tokyo, Japan, ⁵Tokyo University of Agriculture, Atsugi, Kanagawa, Japan.

3:00 PM–4:30 PM **STANDARDIZING A PROTOCOL FOR POULTRY MICROBIOME ANALYSIS/
OTHER PRODUCTION ANIMALS?**

Chair: Monika Proszkowiec-Weglarz, Glenn Zhang, Josh Lyte
Ballpark I and II

This session is open to all registrants, as the committee will discuss their progress in standardizing the protocol of measuring poultry microbiota and the steps they have taken over the course of the past year. The obvious reason behind this effort is to be able to make comparisons across published research on the topic. During this session, the floor will be open to other research groups (academic and industry) to discuss the possibility of standardizing the protocol for microbiota analysis in other production animals.

4:30 PM–5:30 PM All Attendee Reception: Lindberg Room

Tuesday, November 12

8:00 AM–9:00 AM Breakfast: Lindberg Room

8:00 AM–4:30 PM Registration: Ballpark Registration Desk

SESSION 3

Chair: Brian Aldridge, Clemson University
Ballpark I and II

9:00 AM **The effects of heat stress and depressed feed intake on the cecal and ileal microbiota of broiler chickens.**

P. M. Campos*¹, M. Proszkowiec-Weglarz¹, and S. Dridi², ¹USDA-ARS Animal Biosciences and Biotechnology Laboratory, Beltsville, MD, USA, ²Center of Excellence for Poultry Science, University of Arkansas, Fayetteville, AR, USA.

9:30 AM **Effect of heat stress on jejunal metabolic profile in broiler chickens.**

E. S. Greene*¹, H. F. Castro², C. J. Christopher², S. R. Campagna², and S. Dridi¹, ¹University of Arkansas, Fayetteville, AR, USA, ²University of Tennessee, Knoxville, TN, USA.

10:00 AM **A curcumin derivative protease inhibitor mitigates *Brachyspira hamptonii*-induced swine dysentery.**

R. Puentes, R. Hannawayya, N. Mirzadzare, L. Perez-Perez, K. Tiedje, and E. R. Cobo*, *University of Calgary, Calgary, Alberta, Canada.*

10:30 AM Coffee Break: Ballpark Foyer
Sponsored by Innovad

11:00 AM **Effects of dietary fats on diversity and function of cecal microbiota in broiler chickens.**

V. V. Jadhav*, Y. O. Fasina, P. C. Omaliko, J. Han, and S. H. Harrison, *North Carolina Agricultural and Technical State University, Greensboro, NC, USA.*

12:00 PM–1:30 PM Lunch: Lindberg Room



SESSION 4

Chair: Allen Byrd, USDA-ARS, College Station, Texas
Ballpark I and II

- 1:30 PM **A commensal bacterium protects chickens against necrotic enteritis.**
I. Tobin^{*1}, J. Liu¹, M. Whitmore¹, M. Kim¹, Z. Zhao¹, J. Guo¹, J. Scaria², and G. Zhang¹, ¹*Department of Animal and Food Sciences, Oklahoma State University, Stillwater, OK, USA*, ²*Department of Veterinary Pathobiology, Oklahoma State University, Stillwater, OK, USA*.
- 2:00 PM **A meta-analysis of necrotic enteritis in the microbiome.**
D. Varela and A. Ballou^{*}, *SIWA, Iluma Alliance, Durham, NC, USA*.
- 2:30 PM Coffee Break: Ballpark Foyer
- 3:00 PM **Intestinal microbiome confers strong colonization resistance against necrotic enteritis in chickens.**
J. Liu¹, M. Whitmore¹, I. Tobin¹, M. Kaiser², S. Lamont², and G. Zhang^{*1}, ¹*Oklahoma State University, Stillwater, OK, USA*, ²*Iowa State University, Ames, IA, USA*.
- 3:30 PM **Pathological and microbiological investigations of enteric disorders in postweaning pigs: Association between pathogen co-infections and enteritis pattern.**
T. Hassan¹, S. Bagatella¹, M. I. Malik¹, A. Bellato¹, D. Ippolito², S. Zoppi³, M. B. Boniotti⁴, G. L. Alboralis⁴, and M. T. Capucchio^{*1}, ¹*University of Turin, Department of Veterinary Sciences, Grugliasco (Torino), Italy*, ²*National Institute of Health, Department of Food Safety, Nutrition and Veterinary Public Health, Rome, Italy*, ³*Istituto Zooprofilattico Sperimentale di Piemonte, Liguria e Valle d'Aosta, Torino, Italy*, ⁴*Istituto Zooprofilattico Sperimentale della Lombardia e dell'Emilia-Romagna, Brescia, Italy*.
- 4:00 PM–5:00 PM All Attendee Reception: Lindberg Room

Wednesday, November 13

- 8:00 AM–9:00 AM Breakfast: Lindberg Room
- 8:00 AM–10:00 AM Registration: Ballpark Registration Desk

SESSION 5

Chair: Brian Aldridge, Clemson University
Ballpark I and II

- 9:00 AM **Calycosin from Astragali Radix as a potential phytogetic feed additive in weaning piglets: In vivo and in vitro studies.**
J. Wang^{*1,2}, ¹*Institute of Animal Husbandry and Veterinary Medicine, Beijing Academy of Agriculture and Forestry Sciences, Beijing, China*, ²*Sino-US Joint Laboratory of Animal Science, Beijing Academy of Agriculture and Forestry Sciences, Beijing, China*.
- 9:30 AM **Can the mixture of *Hermetia illucens* and *Tenebrio molitor* meals influence the gut health of broiler chickens?**
T. Hassan^{*1}, M. I. Malik¹, C. Sferra¹, M. Gariglio¹, I. Ferrocino², I. Biasato², L. Gasco², and M. T. Capucchio¹, ¹*University of Turin, Department of Veterinary Sciences, Grugliasco (Torino), Italy*, ²*University of Turin, Department of Agricultural, Forest and Food Sciences, Grugliasco (Torino), Italy*.



10:00 AM

Identifying and isolating primary degraders of resistant potato starch from the swine gastrointestinal tract.

H. R. Watkins*^{1,2}, C. L. Loving¹, and C. L. Anderson¹, ¹*USDA-ARS-NADC, Ames, IA, USA*, ²*Iowa State University, Ames, IA, USA*.