

AAAP SYMPOSIUM

Educating the Poultry Professional



Symposium & Scientific Program

THE AMERICAN ASSOCIATION OF AVIAN PATHOLOGISTS

Vision Statement

AAAP will be the premier organization that advances science-based knowledge, expertise, and education on poultry health, welfare, and food safety to provide member value and stakeholder trust.

Mission Statement

AAAP facilitates member collaboration to advance science-based knowledge, expertise, and education on poultry health, welfare, and food safety.



JULY 30 - AUGUST 6, 2020



2020 AAAP Virtual Annual Meeting Program

63rd Annual Meeting

The American Association of Avian Pathologists welcomes you to 2020 AAAP Virtual Annual Meeting, to be held online July 30 - August 6, 2020.

Presentations will be available on demand and via live sessions accessible through Zoom. The AAAP opening session, our keynote speaker, our symposium and the AAAP and ACPV business meetings will all be live events. In addition all presenters will be available for Q&A live on August 4 and August 5. Small group sessions will be available for committees and other groups as outlined in the schedules on the following pages.

CE credits will be available to those who register and attend the sessions. See Page 6 for full details.

AAAP VIRTUAL ANNUAL MEETING July 30 - August 6, 2020 OVERVIEW OF MAJOR EVENTS

Friday, July 31

8 AM CDT | AAAP Program Presentations Become Available for Viewing Online (Open Until Sept. 4, 2020)

Tuesday, August 4 8 AM to 8:30 AM CDT | Opening Session

8:30 AM to 9 AM CDT | Keynote Speaker: Influence of Dietary Factors on Intestinal Immunity and Response to Enteric Challenges, Audrey McElroy, Texas A&M University

4:15 PM to 5:30 PM CDT | Awards Presentation

Wednesday, August 5

8 AM to 12 PM CDT | Symposium: Educating the Poultry Professional 4 PM to 5:30 PM CDT | AAAP Business Meeting

Thursday, August 6

5 PM to 6 PM CDT | ACPV Business Meeting

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2019-2020 AAAP Foundation Board of Directors

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AVMA Committee for Disaster and Emergency Issues Brian Wooming 2019

AVMA Committee on Antimicrobials Randall Singer 2021 Hector Cervantes 2021 (Alternate)

AAAP Representatives to AVMA

AVMAConvention Education Program Committee Ivan R. Alvarado 2021 Natalie Armour 2021 (Alternate)

AVMA Food Safety Advisory Committee Douglas Fulnecheck 2020 Daniel Wilson 2019 (Alternate)

AVMA House of Delegates Gregg J. Cutler 2020 Katherine Weathers 2020 (Alternate)

AVMA Legislative Advisory Committee Suzanne Y. Dougherty 2021 Jose Linares 2019 (Alternate)

AAAP Representatives to Allied Organizations

Council for Agriculture Science and Technology (CAST) Mohamed El-Gazzar 2022

Professional Animal Auditor Certification Organization (PAACO) David A. Pyle 2022

Stakeholder Forum on Antimicrobial Resistance (S-FAR) Randall Singer 2020

United States Animal Health Association (USAHA) Eric Gingerich 2020

International Poultry Welfare Alliance (IPWA) Kenneth Opengart 2022

AAAP Foundation Committee Chairs

Awards Hector Cervantes 2022

Kenneth Eskelund Preceptorship Karen Grogan 2022

Poultry Scholarship Francene Van Sambeek 2022 Animal Agriculture Coalition (AAC)

Jose Linares 2022

Animal Agriculture Alliance (AAA) Donald Ritter 2022

National Chicken Council (NCC) Mark Burleson 2022

United Egg Producers (UEP) Elizabeth Beilke 2022

US Poultry & Egg (USP) Bruce Stewart-Brown 2022

National Turkey Federation (NTF) David Hermes 2022

Foundation Committee Chairs

Development Committee Kristen Roza-Sutherland 2020 Andrea Zedek 2021

Avian Bioscience Travel Scholarship Erica Spackman 2023

AAAP Constitutional Committee Chairs

www.aaap.info/committees

Auditing Karen Burns Grogan Nominating John Smith Resolutions Frederic J. Hoerr

AAAP Task Force Committee Chairs

Animal Welfare and Management Practices Robert Evans 2020

Diseases of Public Health Significance Dustin Burch 2022

Drugs and Antimicrobial Timmothy Cummings 2022

Education Teresa Morishita 2022

Enteric Diseases Alex Zocche 2022

Epidemiology Louise Dufour-Zavala 2022

Food Safety Brett Hopkins 2020

History of Avian Medicine Yuko Sato 2022

Legislative Advisory Suzanne Y. Dougherty 2021 Membership Sara Reichelt 2020

Program Advisory Ivan Alvarado 2021

Respiratory Diseases Alejandro Banda 2022

Research Priorities Natalie Armour 2021

Tumor Virus John Dunn 2020

Toxic, Infectious, Miscellaneous and Emerging Diseases Milos Markis 2022

Small Flocks Victoria Bowes 2020

Women's Network Claudia Osorio 2020

Outreach Bernard Beckman 2023

Committee Review Bruce Stewart-Brown

AAAP Publication Board Chairs

Avian Diseases Advisory Board Y. M. Saif

Avian Diseases Editorial Board Y. M. Saif

Avian Diseases Manual Martine Boulianne Avian Histopathology Manual Board Tahseen Abdul-Aziz

Gross Pathology of Avian Disease Tahseen Abdul-Aziz

Biosecurity Manual Board Robert L. Owen 2019-2020 AAAP Board of Directors

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Eric Jensen AAAP President 2020

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Rocio Crespo Director - Western 2020

Rosemary Marusak Director-at-Large 2021

Jarra Jagne Director-at-Large 2020

Nathaniel Tablante Past President 2020

Diseases of Poultry Editorial Board David E. Swayne

Isolation of Avian Pathogens Manual Board Susan Williams Presentations will be available on-demand from July 31 to September 4, and CE credits will be available to those who register and view the presentations. Registrants will receive access notification on July 31.

In order to receive CE for each lesson you will need to view all of the presentations (lessons) in full in that course. CE for live sessions will be given if you attend the live sessions online. *We encourage you to view all the poster presentations, but you will receive 2 credit hours of CE for any poster viewing. All CE is endorsed and provide by the American Veterinary Medical Association (AVMA).

Courses	Lessons	CE
Avian Influenza (Oral Presentations)	10	2.5
Bacteriology/Antimicrobial (Oral Presentations)	11	2.75
Bacteriology/Antimicrobial: Salmonella and E. Coli (Oral Presentations)	10	2.5
Case Reports (Oral Presentations)	9	2.25
Immunology/Vaccinology (Oral Presentations)	10	2.5
Parasitology/Enteric Health (Oral Presentations)	7	1.75
Parasitology/Enteric Health: Coccidia (Oral Presentations)	10	2.5
Virology (Oral Presentations)	9	2.25
Virology: ILT and IBV (Oral Presentations)	12	3
Virology: Marek's Disease and Reovirus (Oral Presentations)	10	2.5
Wealth of Knowledge 1 (Oral Presentations)	8	2
Wealth of Knowledge 2 (Oral Presentations)	7	1.75
Poster Presentations		
Bacteriology/Parasitology (Poster Presentations)	11	
Case Reports/Pathology (Poster Presentations)	8	
Vaccinology/Immunology (Poster Presentations)	12	
Virology: Non-Respiratory Viruses (Poster Presentations)	12	
Virology: Respiratory Viruses (Poster Presentations)	15	
Wealth of Knowledge/Epidemiology/Diagnostics (Poster Presentations)	12	
*Total Poster Presentation CE	70	2
AAAP Symposium 8 AM to 12 PM CDT Symposium: Educating the Poultry Professional		4
AAAP Womens Network Presentations 3:30 PM-5 PM CDT.Which Came First:		
The Nest Egg or The Retirement Plan		1
Darby Affeldt, DVM, RICP, North Star Resource Group		
AAAP Keynote Session 8:30 AM to 9 AM CDT Keynote Speaker: Influence of		
Dietary Factors on Intestinal Immunity and Response to Enteric Challenges, Audrey McElroy, Texas A&M University		0.5
· · ·		
Total Potential CE		36



The following events will be presented live at the following times during the AAAP Virtual Meeting.

All members are invited to attend any of the listed events.

NOTE: All times listed are Central Daylight Time.

Zoom links will be sent to all registrants the week of July 27.

Wednesday, July 29

7 PM to 7:45 PM CDT | Mentors/Mentees

Thursday, July 30

9 AM to 10 AM CDT | Drugs and Antimicrobials Committee

10 AM to 11 AM CDT | Legislative Advisory Committee CANCELED

10 AM to 11 AM CDT | Avian Diseases Advisory Board (Participation/attendance by invitation only)

11 AM to 12 PM CDT | Avian Diseases Editorial Board (Participation/attendance by invitation only)

11 AM to 12 PM CDT | Outreach Committee

12 PM to 1 PM CDT | Lunch

<u>1 PM to 2 PM CDT | Preceptorship Committee</u> **CANCELED** (Participation/attendance by invitation only)

2 PM to 3 PM CDT | Small Flocks Committee

3 PM to 4 PM CDT | Respiratory Diseases Committee

4 PM to 5 PM CDT | Diseases of Public Health Significance RESCHEDULED FOR AUG. 6

5 PM to 6 PM CDT | Education Committee

Friday, July 31

8 AM CDT | AAAP Program Presentations Become Available for Viewing Online (Open Until Sept. 4, 2020)

9 AM to 10 AM CDT | Food Safety Committee

9 AM to 10 AM CDT | AAAP Auditing Committee (Participation/attendance by invitation only)

10 AM to 12 PM CDT | Animal Welfare Committee

12 PM to 1 PM CDT | Lunch

1 PM to 2 PM CDT | AAAP Foundation Development Committee

1 PM to 2 PM CDT | AAAP Foundation Scholarship Committee (Participation/attendance by invitation only)

2 PM to 3 PM CDT | Awards Committee (Participation/attendance by invitation only)

3:30 PM to 5 PM CDT | AAAP Women's Network Committee AAAP Learning Objectives For Which Came First: The Nest Egg Or The Retirement Plan Darby Affeldt, DVM, RICP, North Star Resource Group

5 PM to 6 PM CDT | Membership Committee

Saturday, August 1

9 AM to 10 AM CDT | Avian Diseases Manual Editorial Board (Participation/attendance by invitation only)

10 AM to 11 AM CDT | Research Priorities Committee

11 AM to 12 PM CDT | Epidemiology Committee

12 PM to 1 PM CDT | Lunch

1 PM to 2 PM CDT | History of Avian Medicine Committee

2 PM to 3 PM CDT | Tumor Virus Committee

3 PM to 4 PM CDT | Enteric Diseases Committee

4 PM to 6 PM CDT | TIME Committee

Tuesday, August 4

8 AM to 8:30 AM CDT | Opening Session

8:30 AM to 9 AM CDT | Keynote Speaker: Influence of Dietary Factors on Intestinal Immunity and Response to Enteric Challenges, Audrey McElroy, Texas A&M University

9 AM to 9:30 AM CDT | **Avian Influenza Q&A** Moderators: David Swayne (Primary), Darrell Kapczynski (Alternate)

9:30 AM to 9:45 AM CDT | Break

9:45 AM to 10:10 AM CDT | **Virology: ILT and IBV Q&A** Moderators: Rodrigo Gallardo (Primary), Alejandro Banda (Alternate)

10:10 AM to 10:45 AM CDT | **Virology: Marek's Disease and Reovirus Q&A** Moderators: Alejandro Banda (Primary), Rodrigo Gallardo (Alternate)

10:45 AM to 11:15 AM CDT | **Virology Q&A** Moderators: Darrell Kapczynski (Primary), Alejandro Banda (Alternate)

11:15 AM to 11:40 AM CDT | Wealth of Knowledge 1 Q&A Moderators: Michelle Kromm (Primary), Enrique Montiel (Alternate)

11:40 AM to 12 PM CDT | Wealth of Knowledge 2 Q&A Moderators: Enrique Montiel (Primary), Michelle Kromm (Alternate)

12 PM to 1 PM CDT | Lunch

1 PM to 1:30 PM CDT | **Bacteriology/Antimicrobial**: **Salmonella and E. Coli Q&A** Moderators: Elena Behnke (Primary), Monique Franca (Alternate)

1:30 PM to 2 PM CDT | **Bacteriology/Antimicrobial Q&A** Moderators: Monique Franca (Primary), Elena Behnke (Alternate)

2 PM to 2:20 PM CDT | **Parasitology/Enteric Health Q&A: Coccidia Q&A** Moderators: Jaime Ruiz (Primary), Francene van Sambeek (Alternate)

2:20 PM to 3 PM CDT | **Parasitology/Enteric Health** Moderators: Francene van Sambeek (Primary), Jaime Ruiz (Alternate)

3 PM to 3:15 PM CDT | Break

3:15 PM to 3:45 PM CDT | **Case Report Q&A** Moderators: Karen Grogan (Primary), Kalen Cookson (Alternate)

AAAP VIRTUAL ANNUAL MEETING

LIVE EVENTS

3:45 PM to 4:15 PM CDT | Immunology/Vaccinology Q&A Moderators: Kalen Cookson (Primary), Karen Grogan (Alternate)

4:15 PM to 5:30 PM CDT | Awards Presentation

Wednesday, August 5

8 AM to 12 PM CDT | Symposium: Educating the Poultry Professional Moderators: Dr. Monique Franca, Dr. Subhashinie Kariyawasam

8 AM | General Introduction & Welcome, Dr. Valerie Marcano, Symposium Chair

8:05 AM | Current gaps in poultry medicine education and professional development needs of the meat and egg layer industries, Dr. Mark Bland

8:25 AM | Career opportunities in the field of poultry medicine. How do you get into the field? Recruitment!, Dr. David French

8:45 AM | Teaching effective communication and leadership skills to poultry medicine professionals, Dr. Karen Grogan

9:05 AM | The role of poultry veterinarians educating commercial and backyard poultry growers, Dr. Victoria Bowes, Dr. Louise Dufour-Zavala, Dr. Teresa Morishita

9:45 AM | The use of technology to improve poultry medicine instruction and continuing education, Dr. Eric Gingerich

10 AM CDT | Break

10:30 AM | Microaggressions, Dr. Paige Carmichael

11 AM | **Considerations of career changes in poultry veterinary medicine,** Dr. Elena Behnke, Dr. Charles Hofacre, Dr. Rafael Monleon, Dr. Guillermo Zavala

12 PM to 1 PM CDT | Lunch

1 PM to 1:15 PM CDT | Case Reports/Pathology Poster Q&A Moderators: Brian Jordan (Primary), Milo Markis (Alternate)

1:15 PM to 1:45 PM CDT | **Virology: Respiratory Viruses Poster Q&A** Moderators: Brian Jordan (Primary), Milo Markis (Alternate)

1:45 PM to 2:15 PM CDT | **Virology: Non-Respiratory Viruses Poster Q&A** Moderators: Milo Markis (Primary), Brian Jordan (Alternate)

2:15 PM to 2:30 PM CDT | Break

2:30 PM to 3 PM CDT | WoK/Epidemiology/Diag Poster Q&A Moderators: Mohamed El Gazzar (Primary), Ian Rubinoff (Alternate)

3 PM to 3:30 PM CDT | **Bacteriology/Parasitology Poster Q&A** Moderators: Mohamed El Gazzar (Primary), Ian Rubinoff (Alternate)

3:30 PM to 4 PM CDT | **Vaccinology/Immunology Poster Q&A** Moderators: Ian Rubinoff (Primary), Mohamed El Gazzar (Alternate)

4 PM to 5:30 PM CDT | AAAP Business Meeting

Thursday, August 6

8 AM to 10 AM CDT | ACPV Board of Governors Meeting (Participation/attendance by invitation only)

9 AM to 12 PM CDT | Association of Veterinarians in Turkey Production (Participation/attendance by invitation only)

10 AM to 11 AM CDT | Association of Poultry Primary Breeder Veterinarians (Participation/attendance by invitation only) **CANCELED**

10 AM to 1 PM CDT | Association of Poultry Consultants and Independent Laboratories (Participation/attendance by invitation only)

10 AM to 5 PM CDT | Association of Veterinarians in Broiler Production (Participation/attendance by invitation only) CANCELED

12 PM to 5 PM CDT | Association of Veterinarians in Egg Production (Participation/attendance by invitation only)

1 PM to 4 PM CDT | Histopathology/Case Report Interest Group CANCELED

1 PM CDT | Small Flocks Interest Group

3 PM to 4 PM CDT | Diseases of Public Health Significance

5 PM to 6 PM CDT | ACPV Business Meeting

Friday, August 7

8 AM to 5 PM CDT | AAAP Board of Directors Meeting

AAAP VIRTUAL ANNUAL MEETING ON-DEMAND SESSIONS

On-demand presentations will be available from July 31 to September 4, and CE credits will be available to those who register and view the presentations. Registrants will receive access notification on July 31.

Oral Presentations

Avian Influenza

Pathobiology of classical H7N1 and Gs/GD H5N8 highly pathogenic avian influenza viruses in different chicken breeds and role of Mx 2032 G/A polymorphism in infection outcome Kateri Bertran, *IRTA, Centre de Recerca en Sanitat Animal (CReSA, IRTA-UAB)*

Vaccination Efficacy of Multivalent Recombinant Herpesvirus Turkey Vaccines Against Highly Pathogenic Avian Influenza

Miria Criado, USDA

Evaluation of protection of H5 vaccination regimes against early challenge with HPAI-H5N1 on commercial broiler chickens BBNTATION CANCELED

Wael Elfeil, Suez Canal University, Ismailia, Egypt

Development of next-generation live attenuated influenza vaccines with elite interferon-inducing capabilities

Amir Ghorbani, The Ohio State University

Evaluation of the cross-antigenicity of two H9N2 vaccine strains assessed by HI-test using sixteen distinct AIV H9N2 antigens

Andreas Herrmann, MERIAL S.A.S.

T Cell Epitope Engineering Strategy to Improve the Immunogenicity of Avian Influenza H7N9 Vaccine

Hyesun Jang, University of Georgia

Characterization of a Novel Avian Influenza Live Virus Vaccine Based on Disruption of M2/M42 Gene Expression That Protects Against Clade 0 and 2.3.4.4 Highly Pathogenic Avian Influenza Darrell Kapczynski, USDA-ARS-USNPRC

Roles of the matrix and nucleoprotein genes on the virulence of H5N8 highly pathogenic avian influenza virus clade 2.3.4.4

Christina Leyson, Southeast Poultry Research Laboratory

Evaluation of environmental sample collection devices and target sampling areas for Avian Influenza detection in layer cages

Jongseo Mo, United States Department of Agriculture, Southeast Poultry Research Laboratory

Infectivity and transmission in turkeys and chickens of low and highly pathogenic avian influenza viruses from the 2020 outbreak in turkey farms in North Carolina and South Carolina

Mary Pantin-Jackwood, Southeast Poultry Research Lab, US National Poultry Research Center, US Dept. of Agriculture-Agricul

Bacteriology/Antimicrobial

Trends in antimicrobial use and antimicrobial resistance in broiler chickens; impact of industry-wide antimicrobial use reduction strategy

Agnes Agunos, Public Health Agency of Canada

Effects of the in ovo Administration of the 6/85 Mycoplasma gallisepticum Vaccine on Layer

Chicken Embryo Livability and Post-Hatch Performance

Abdulmohsen Alqhtani, Mississippi State University

Use of AMN to prevent Clostridium perfringens induced necrotic enteritis in broilers David Diez Arias, *Biovet, S.A.*

Evaluation of the Effectiveness of a Direct-fed Microbial with an AGP and an Ionophore Coccidiostat to Reduce Salmonella heidelberg in Broilers

Charles Hofacre, Southern Poultry Research Group, Inc.

Development of a Mass Administered Vaccine for Prevention of Necrotic Enteritis in Broilers Charles Hofacre, *Southern Poultry Research Group, Inc.*

Characterization of bacterial chondronecrosis with osteomyelitis (BCO) in broilers in a commercial setting

Elizabeth Kim, DuPont

Detection of Necrotic Enteritis (NE) B-Like Toxin in Biological Samples of NE-Afflicted Chickens by Capture Enzyme-Linked Immunosorbent Assay

Kyung-Woo Lee, ARS-USDA

Necrotizing Hepatitis Associated with Clostridium perfringens in Broiler Chicks Valerie Marcano, *University of Georgia*

Characterization and Antimicrobial Resistance Patterns of Pasteurella multocida Isolates from Chickens in Mississippi

Eric Orozco, Mississippi State University PRDL

Genomic Analysis of Avibacterium paragallinarum from 2019 infectious coryza cases in the United States

Ha-Jung Roh, Ceva Animal Health

Genomic landscape of Ornithobacterium rhinotracheale in commercial turkey production in the United States

Emily Smith, University of Minnesota

Risk Factors Associated with the Incidence of Turkey Clostridial Dermatitis in Big Toms Laura Tensa, *Cargill Turkey & Cooked Meats* AAAP VIRTUAL ANNUAL MEETING

ON-DEMAND SESSIONS Oral Presentations

Bacteriology/Antimicrobial: Salmonella and E. Coli

Exploring the Fitness of Retail Poultry Escherichia coli to Cause Foodborne Urinary Tract Infections Ananta Arukha, *University of Florida*

Colonization of Internal Organs by Salmonella Enteritidis and Salmonella Kentucky in

Experimentally Infected Laying Hens in Indoor Cage-Free Housing

Richard Gast, USDA

Emergence of a Novel Salmonella enterica Serotype Reading Clone is Linked to its Expansion in Commercial Turkey Production

Timothy Johnson, University of Minnesota

Transmissible antibiotic resistance genes present in Escherichia coli and Salmonella from USA poultry

Daniel Karunakaran, Arm and Hammer Animal Nutrition

The Comparative Analysis of the Salmonella enterica subsp. enterica Serovar Infantis IncFIB Plasmid Genetic Sequence Would Aid to Identify Relevant Subtypes for Salmonella Control in Poultry Roxana Sanchez Ingunza, *Private Consulting - Poultry*

Impact of E. coli vaccination on production performance of turkeys and E. coli ecology over time Katie Stumvoll, *Jennie-O Turkey Store*

Autogenous Salmonella Vaccine Isolate Selection Process: Identifying Candidate Strains Francene Van Sambeek, *Elanco Animal Health*

An Embryo Co-infection Model for Enterococcus faecalis and Avian Pathogenic E. coli Assesses Pathogenicity and Virulence of Polybacterial Infections

Grayson Walker, North Carolina State University College of Veterinary Medicine

Case Reports

Diagnosing and managing Inclusion Body Hepatitis outbreak in primary broiler breeders Emma Castillo, *Aviagen*

A Case Report of Erysipelothrix rhusiopathiae Infection in Turkey Breeder Hens Ana Paula Da Silva, UC Davis

Case Report: Clinical and Histopathological Findings in First Reported Case of False Layer Syndrome in Georgia

Karen Grogan, University of Georgia, PDRC

Salmonella Bacterin Induced Hepatopathy in Broiler Breeder Pullets Eric Heskett, Case Farms

An Interesting Case of Pasteurella multocida "Like" Clinical Signs with a Slew of Organisms Geoffrey Lossie, Purdue University College of Veterinary Medicine/Indiana Animal Disease Diagnostic Lab

Acute Hypocalcemia in a Flock of Commercial Egg Laying Chickens

Chase Miller, Elanco Animal Health

On a Friday afternoon...

Kayla Niel, Hy-Line International

Case Report: A Unique Toxicity in Broiler Breeders

Eric Shepherd, University of Georgia Poultry Diagnostic and Research Center

Investigation of Increased Cases of Erysipelas in Commercial Turkeys

Stephen Williams, Butterball

Immunology/Vaccinology

Replication of HVT Single (HVT-ILT) and Double (HVT-ND-ILT) Constructs and Efficacy against Challenge in SPF Birds.

Ivan Alvarado, Merck Animal Health

Nanoparticle-based co-delivery of IBV antigen and adjuvant induces protective mucosal immunity in chickens

Hui-Wen Chen, National Taiwan University

Salmonella Strains Displaying ENhanced Innate Immunity Response Activators (ENIIRA) to Stimulate Innate Immunity to Enhance Protective Immunity

Roy Curtiss, University of Florida

Protective Effects of a Modified Live E. Coli Vaccine Against Homologous And Heterologous Challenges In Laying Hens

Manuel Da Costa, Zoetis

The Effective Use of Siderophore Receptor Proteins (SRP) as Antigens in Poultry Vaccines. Dan Domingo, *Epitopix LLC*

False layer syndrome IBV, pathogenicity insights and surveillance in layer flocks Rodrigo Gallardo, *University of California, Davis*

Alternative Approaches to Development of Vaccines against Food Safety Pathogens Kemal Karaca, Curtiss Healthcare

Histological Evaluation of the Effects of High Incubation Temperature on Embryonic Development of Thymus in Broiler Chickens

ChangHee Lee, Poultry diagnostic and research center

Development of Poultry Immune Reagents

Hyun Lillehoj, Animal Biosciences and Biotechnology Laboratory, Beltsville Agricultural Research Center

Protection by a Novel Dual Recombinant HVT ND-IBD Vaccine alone or in combination of an IBD 89/03 Live Attenuated Vaccine against a Variant E Strain Challenge of Infectious Bursal Disease Alexandra Mendoza-Reilley, *Merck Animal Health*

Parasitology/Enteric Health

Avian Cryptosporidiosis: The Need for a Paradigm Shift. Hayet Abbassi, University of Minnesota and Pasteur Institute of Tunisia

Parasitological Surveillance in a Pastured Poultry Farm

Maria Tereza Bethonico Terra, Auburn University

Resistance to fenbendazole in Ascaridia dissimilis and its economic impact on the production of turkeys

James Collins, University of Georgia, Dept. of Infectious Diseases

Broiler Breeders: An Assessment of the Enteric Parasites Population

Steve Fitz-Coy, Merck AH

Dietary supplementation with Bacillus subtilis direct-fed microbials alters chicken intestinal metabolite levels

Inkyung Park, USDA-ARS

In vitro inhibitory effect of a new three-strains selected probiotic on several serovars of Salmonella John Schleifer, *Chr. Hansen, Inc.*

Parasitology/Enteric Health: Coccidia

A new method for Eimeria Speciation and Quantification Using Flow Cytometry

Daniel Adams, North Carolina State University

Coccidiosis Vaccine Trial in Turkey Poults

Zachary Adams, Iowa State University College of Veterinary Medicine

Typing Eimeria maxima isolates from Alabama broiler flocks using a multi-locus sequence typing (MLST) scheme

Miranda Carrisosa, Auburn University

Zoamix: A Blast from the Past

Timothy Cummings, Zoetis

Experiences Vaccinating with a Novel Coccidiosis Vaccine in Long Lived Chickens in the United States Kelli Jones, *Ceva*

Lessons learned changing coccidiosis vaccines in grandparent broiler breeders

Christina Lindsey, Aviagen

The Potential Impact Of Three Phytogenic Feed Additives On Chicken Eimeria from Coccidiosis Vaccine. Chad Malinak, *Merck Animal Health*

Effects of Coccidiosis Vaccination With or Without the Use of a Phytogenic Feed Additive in Broilers Marcos Rostagno, *Phytobiotics North America*

Identifying and Quantifying Eimeria Species in Mixed Samples with Molecular-Based Technologies Ryan Snyder, *University of Guelph*

Applying Metagenomics to Characterize the Eimeria species Composition in Litter from Commercial Broiler Farms

Kate Worthing, ARS-USDA

Virology

MinION- and MiSeq-based Sequencing of Total RNA for Detection of Chicken Respiratory Pathogens in Clinical Swabs

Salman Latif Butt, University of Agriculture Faisalabad

Comparison of the monitoring methods for following the take of immune-complex vaccine against Gumboro disease in commercial layers

Claudia Carranza, Ceva Animal Health

Viral Hepatitis in Turkey Poults

Megan Lighty, Jennie-O Turkey Store

Isolation of Egg Drop Syndrome (EDS) Adenovirus from Brown Layers in Pennsylvania Milos Markis, *AviServe LLC*

Comparison Of Antibody Response Against Infectious Bursal Disease In Broiler Breeders Injected Subcutaneously In The Back Of The Neck, Inguinal Fold And Intramuscular In The Thigh Or Breast Enrique Montiel, *Boehringer Ingelheim*

Virulence assessment of chicken astrovirus (CAstV) isolated from outbreaks of White Chicken Syndrome (WCS) in Western Canada

Victor Palomino-Tapia, University of Calgary

Effect of antibiotic growth promoter administration on the intestinal microbiota and virus shedding post avian influenza virus infection in chickens

Brittany Seibert, University of Georgia

SARS-CoV-2 and **MERS-CoV** are unable to replicate in common poultry species and embryonating chicken eggs Erica Spackman, *SEPRL-USDA-ARS*

The Economics of Neoplastic Disease

Guillermo Zavala, Avian Health International, LLC

Virology: ILT and IBV

Validation of Day of Age Infectious Bronchitis Vaccination

Matilde Alfonso, Ceva Animal Health

Molecular characterization of field isolates of infectious bronchitis virus in Mississippi from 2013 to 2019

Alejandro Banda, Mississippi State University

Genotyping of Infectious Laryngotracheitis virus (ILTV) isolates from Western Canada based on partial open reading frame (ORF) a and b

Catalina Barboza Solis, University of Calgary

Infectious Bronchitis Challenge Studies in Broilers—a Comparison of IB Vaccine "Takes" and Protection

Kalen Cookson, Zoetis

Evaluation of host genetic resistance against infectious laryngotracheitis

John Dunn, USDA-ARS-USNPRC

Infectious Laryngotracheitis Sequence Typing Directly from Clinical Samples Mohamed El-Gazzar, *Iowa State University*

Efficacy Studies of a Variant Infectious Bronchitis Virus Vaccine

Brianna Ford, CEVA Animal Health

Efficacy of two commercial infectious coryza vaccines after challenge with a serotype C

Avibacterium paragallinarum strain isolated from outbreaks in layers and broilers in California Rodrigo Gallardo, *University of California, Davis*

Pathogenesis of the Canadian Delmarva (DMV/1639) Infectious Bronchitis Virus (IBV) Infection in Layers

Mohamed S. H. Hassan, University of Calgary

DMV/1639 type IBV transmits from vaccinated chickens to other vaccinated chickens after challenge

Brian Jordan, The University of Georgia

Safety and Protection Efficacy of a Cell Line Adapted Infectious Laryngotracheitis Virus (ILTV) BDORFC Strain Following In ovo and/or Spray Vaccination with and without rHVT-LT Vaccine Daniel Maekawa Maeda, *University of Georgia*

Investigating the role of Infectious Bronchitis Virus variant DMV/1639 in incidence of False Layer Syndrome

Adrea Mueller, University of Georgia

Virology: Marek's Disease and Reovirus

Pathogenic and Immunogenic Evaluation of Avian Reovirus Variant Strains Isolated from Clinical Cases

Sofia Egana, University of California, Davis

Review of a New Generation Marek'S Vaccine, RN1250 Strain, in Combination with Herpesvirus of Turkey (HVT) Vectored Vaccines Used in Various Types of Birds Worldwide

Stephane Lemiere, Boehringer Ingelheim

Protection Against 9109-Like Variant IBDV Using Dual Recombinant HVT-ND-IBD Vaccine Alone Andres Montoya, *Merck Animal Health*

Differential Pathogenesis of Turkey Reoviruses associated with Arthritis, Enteritis and Hepatitis Sunil Mor, *University of Minnesota*

Dual ND-IBD HVT Construct Vaccines: Efficacy and Onset of Immunity When Challenged with IBD Variant Strains

Linnea Newman, Merck Animal Health

Turkey Breeders Perspective : How to Achieve Reovirus Maternal Antibodies in Poults through Vaccination of Parents

Cynthia Philippe, Hendrix Genetics Ltd

Evaluation of Attenuated Variant Reoviruses as Modified Live Vaccines Holly Sellers, *Poultry Diagnostic & Research Center, University of Georgia*

Evaluation of Antibody Response to Autogenous Reovirus and Infectious Bursal Disease Virus Vaccines

Katharine Shamoun, Poultry Diagnostic & Research Center, University of Georgia

Turkey Reovirus Hepatitis: An Emerging Disease from a Known Etiological Agent. Andrew Smith, *Butterball*

Andrew Smith, Butterbuil

Case Report: Runting and Stunting Syndrome in a Flock of Commercial Brown Layers Jim Stockam, *Merck Animal Health*

Wealth of Knowledge 1

2020 Research Priorities of the American Association of Avian Pathologists Natalie Armour, *Mississippi State University, CVM, DPPM*

Post Vaccination Monitoring and Respiratory Disease Monitoring in Broiler Flock by On-Side Fully Automated POCKIT Central PCR system

Keat Fu, Aviagen Inc.

Using geospatial methods to produce a Georgia risk map for avian influenza

Louise Dufour-Zavala, GPLN

Analytical epidemiology of Spotty Liver Disease

Yuanshuo Karen Gao, University of Sydney

Egg Layer Biosecurity in 2020 – An Assessment of Daybreak Foods, Inc. Biosecurity Program Rosemary Marusak, Daybreak Foods, Inc

Common Misconceptions in Assuming a Product is a Viable Alternative to an Antibiotic Greg Mathis, *Southern Poultry Research, Inc.*

New Features of 14th Edition of Diseases of Poultry

David Swayne, USDA/ARS/SEPRL

Wealth of Knowledge 2

Technical and Analytical Considerations Performing Retrospective and Prospective Studies Using Clostridial Dermatitis in Turkeys as a Model

Dave Fernandez, FSTAATS Agri-Business Solutions

What Happens When You Feed Layer Ration to Chickens From 8 to 14 Weeks of Age.

Richard Fulton, Michigan State University

Development And Validation Of Two Diagnostic Real-Time PCR (TaqMan) Assays For The Detection Of Bordetella Avium From Clinical Samples

Amro Hashish, IOWA State University

Comparison of Selected Blood Biochemistry Values in Meat-Type Chickens and Turkeys at Critical Ages using the i-STAT and VetScan2

Fernando Jimenez, North Carolina State University, College of Veterinary Medicine

Comparison of Turkey Biochemical Test Results Between a Handheld Blood Analyzer and a Conventional Laboratory Blood Analyzer

Hannah Sather, North Carolina State University College of Veterinary Medicine

Is Aspirin a Useful Adjunct in the Management of Vaccine Reactions and Respiratory Disease in Broilers?

John Smith, Alectryon LLC

Evaluation of Factors Correlated with the Development of Hemorrhagic Hepatopathy in Broiler Breeder Pullets

Linnea Tracy, University of Georgia Poultry Diagnostic and Research Center

The Mission and Goals of AAAP's Diversity and Inclusion Taskforce

Valerie Marcano, University of Georgia

AAAP VIRTUAL ANNUAL MEETING ON-DEMAND SESSIONS

On-demand presentations will be available from July 31 to September 4, and CE credits will be available to those who register and view the presentations. Registrants will receive access notification on July 31.

Poster Presentations

Bacteriology/Parasitology

Efficacy of a Hops Extract Phytobiotic Administered in the Feed for the Control of Necrotic Enteritis Caused by Clostridium perfringens in Broiler Chickens

Maria Dashek, BV Science

Whole Genome Analysis of Mycoplasma gallispeticum Isolates from the United States Mohammadreza Ehsan, University of Georgia

The effect of saponins on the cycling of commercial coccidiosis vaccines

Luis Gomez, Phibro Animal Health

Coccidia dynamics in litter and feces of chickens in a floor pen trial

Ruediger Hauck, Auburn University

Salmonella Investigation: Finding the Needle in the Haystack

Genevieve Huard, Hendrix Genetics Ltd

Control of Northern Fowl Mite (Ornithonyssus sylviarum) on Egg Layer Chickens using a Fluralaner Solution Administered to Birds through Drinking Water

Faris Jirjis, Merck Animal Health

Genetic and Gender influences in a Necrotic Enteritis Challenge Model in Broiler Chickens Matthew Jones, *Southern Poultry Research Group*

Genomic Analysis of Avian Pathogenic Escherichia coli (APEC) Associated with Colibacillosis using Long Read MinION Sequencing.

Catherine Logue, University of Georgia

Identification, serotyping and molecular characterization of Avibacterium paragallinarum isolates obtained from outbreaks of infectious coryza in commercial poultry in the northern area of Mexico, Sonora

Linda Luna, Universidad Autónoma del estado de México, Facultad de Medicina Veterinaria y Zootecnia

Inhibition Of Fecal Shedding Of Salmonella Typhimurium In Cobb 500 Broilers Fed Availa®Zn Marco Rebollo Franco, Zinpro Performance Minerals

Spotty Liver Disease in the U.S. layers and genetic analysis of Campylobacter hepaticus Ha-Jung Roh, *Ceva Animal Health*

Case Reports/Pathology

Update on Variant Reovirus Infections and Lameness in Ontario Broilers

Marina Brash, Animal Health Laboratory

A Case Study of Thiamine Deficiency in Brown Pullets in East Java, Indonesia Seiche Genger, Hy-Line International

An Unusual Case of IBD in a Commercial Pullet Flock

Jessica Higgins, Kalmbach Feeds

Histopathologic Investigation of Poultry Processing Quality Problems

Frederic Hoerr, Veterinary Diagnostic Pathology, LLC

Case Study – Can We Accurately Predict Bird Weights at the Plant?

Albert Payne, 1010 Consulting Group

Adventures In Seroconversion: Initial Failure To Respond to Chicken Infectious Anemia Virus Vaccination Ian Rubinoff, *Hy-Line International*

Please Keep Your Copper In Pennies, Not My Birds; A Field Case Report Of Copper Toxicity In 10 Day Old Poults

Jolene Tourville, Jennie-O Turkey Store

Histopathologic and Bacteriologic Characterization of Femoral Head Separation, Femoral Head Necrosis and Bacterial Chondronecrosis with Osteomyelitis in Broilers

Floyd Wilson, MVRDL

Vaccinology/Immunology

Immune responses to avian influenza virus infection in two genetically distinct, highly inbred chicken lines Emily Aston, University of California-Davis

Safety of Fowl Poxvirus-based Vector Vaccines in Commercial Layers

Jorge Chacón, Ceva Animal Health

Effect of a complex antibody antigen vaccine on the decay of Infectious bursal disease maternal antibodies in broilers

Alfredo Condemarin, Hipra Peru SAC

Comparison of Serological Response, Persistence and Serological Profile in Progeny against Chicken Infectious Anemia Virus in Three Flocks of Broiler Breeders

Bruno Garcia, San Marcos University

Evaluation of a Novel Autogenous Bacterin Strain for Controlling Escherichia coli Infections in Poultry Karen Grogan, *University of Georgia*

Early Onset of Immunity and Duration of Immunity of A Recombinant HVT-IBD Vaccine against Virulent, Variant, and Very Virulent IBD in SPF Birds

Angela Hartman, Zoetis

Comparative Evaluation of Live Attenuated Salmonella Vaccines to Prevent Salmonella Infections in Chickens. Vinicius Lima, *University of Florida*

Development and characterization of novel mouse monoclonal antibodies against chicken chemokine CC motif ligand 4

Mingmin Lu, USDA-ARS

Duration of immunity of ts-11 Mycoplasma gallisepticum vaccine

Chris Morrow, Bioproperties

Compatibility of Procerta HVT-ND Vaccine with Magniplex to Provide Protection Against Velogenic NDV and Virulent Classical IBDV Challenge in SPF Birds

Sing Rong, Zoetis

Development of a New Trivalent HVT-vectored Vaccine Against Marek's Disease, Infectious Bursal Disease and Infectious Laryngotracheitis

Mariana Sa e Silva, Boehringer Ingelheim

Reverse genetic infectious bursal disease virus in turkeys

Ching Ching Wu, School of Veterianry Medicine, National Taiwan University, Taipei, Taiwan

Virology: Non-Respiratory Viruses

Vaccine Take Monitoring in Broilers Flocks Immunized against Gumboro Disease with Immune Complex and Vector Vaccines and its Relationship with Productivity

Jorge Chacón, Ceva Animal Health

Update on IBD Viruses (IBDVs) Infecting Broilers Today and How Inactivated Vaccines Protect Against Different Viruses in the AL2 and T1 Families

Kalen Cookson, Zoetis

A Serologic Survey for Astrovirus Antibody in Georgia Broilers

James Davis, Georgia Poultry Laboratory Network

Post Marek's Disease Vaccination Monitoring with Feather Pulp and Spleen in (Layer/Breeder) by On-Side Fully Automated POCKIT Central PCR system

Keat Fu, Aviagen Inc.

Pathogenicity of infectious bursal disease viruses isolated from commercial poultry with immune suppression related disease.

Daral Jackwood, The Ohio State University

Investigation of the virulence of Marek's disease virus with virulence-associated gene modification Taejoong Kim, USDA-ARS-USNPRC

Genomics and pathogenicity of an Indiana turkey coronavirus isolate

Tsang Long Lin, Purdue University, CVM

Next Generation Sequencing (NGS) of chicken astrovirus (CAstV) isolated from outbreaks of White Chicken Syndrome (WCS) in Western Canada

Victor Palomino-Tapia, University of Calgary

Molecular and pathological characterization of avian reovirus from clinical cases of tenosynovitis in poultry flocks from Costa Rica

María Piche-Ovares, Universidad Nacional

Serological Comparison Between Different Vaccination Programs against IBD in the Field Elisa Russo, *MSD Animal Health Srl*

Avian Pathogens in Kenyan Backyard Poultry Farms and Live Bird Markets

David Suarez, Southeast Poultry Research Laboratory, Agricultural Research Service, U.S. Department of Agriculture

Spatio-Temporal Prevalence of IBDV in Commercial Chicken Flocks in Mexico Fernando Lozano, *CEVA ANIMAL HEALTH*

Virology: Respiratory Viruses

Unfavorable Consequences of Lung Macrophage Recruitment Following Infectious Bronchitis Virus (IBV) Infection

Mohamed Faizal Abdul-Careem, University of Calgary

The Use of FTA Cards for Molecular Detection of AIV in Backyard Flocks at Sales Events

Len Chappell, Georgia Poultry Laboratory Network

Comparison of the protection and viral elimination of a vaccination program against Newcastle disease virus using homologous vaccines of genotype XII and a conventional vaccination program in broilers.

Nelly Cribillero, National University of San Marcos - UNMSM

Molecular Characterization of Newcastle Disease Viruses Isolated from Chickens in Tanzania Ana Paula Da Silva, *California Animal Health and Food Safety Laboratory - Turlock branch*

Evaluation of the impact of the temperature of water used for the reconstitution of Infectious Bronchitis (IB)

live attenuated vaccines

Andrea Delvecchio, Boehringer Ingelheim AH

Evaluation of protection of ND vaccination regimes against early challenge with Velogenic Newcastle virus-

VII.1 PRESENTATION CANODILED

Wael Elfeil, Suez Canal University, Ismailia, Egypt

Detection and Molecular Characterization of Strains of Avian Influenza Virus Isolated From Migratory Birds of The Coast of Peru, 2018-2019

Rosa Gonzalez, San Marcos University, Lima-peru

Live Attenuated Vaccine-like Viruses are Involved in the Evolution of the Canadian Delmarva (DMV/1639) Infectious Bronchitis Virus

Mohamed S. H. Hassan, University of Calgary

Avian influenza virus surveillance in columbiform birds of Huarmey, Ancash-Peru

Eliana Icochea, University of San Marcos

Infectious Bronchitis Surveillance via RT-PCR

Jose Linares, Ceva Animal Health

Characterization of variant infectious bronchitis virus from a small scale poultry holding in Egypt Ibrahim Moharam, *Friedrich-Loeffler-Institut, Germany*

Highly pathogenic avian influenza H5N8 virus infection: pathological presentation of game bird cases during the 2016/2017 epizootic in Britain.

Christopher Poulos, Animal and Plant Health Agency

The Effect of Eurasian Lineage H9N2 Low Pathogenicity Avian Influenza Virus on Chicken Egg Production and Contamination of Eggs with Virus

Erica Spackman, SEPRL-USDA-ARS

Reconstitution and Mutagenesis of Avian Infectious Laryngotracheitis Virus from Cosmid and Yeast Centromeric Plasmid Clones

Stephen Spatz, US National Poultry Research Center, Agricultural Research Service, United States Department of Ag

Protection against different genotypes of Newcastle disease viruses (NDV) afforded by an adenovirus-vectored fusion protein and live NDV vaccines

David Suarez, Southeast Poultry Research Laboratory, Agricultural Research Service, U.S. Department of Agriculture

Genetic Evolution and Genotype Replacement of Clade 2.3.2.1a H5N1 Highly Pathogenic Avian Influenza Viruses in Bangladesh

Junghoon Kwon, U.S. National Poultry Research Center

Phylogenetic analyses of the H7N3 low and high pathogenicity avian influenza viruses causing an outbreak in turkeys in North Carolina and South Carolina in 2020

Sungsu Youk, U.S. National Poultry Research Center, ARS-USDA

Wealth of Knowledge/Epidemiology/Diagnostics

Assessing perceived risks and benefits for participation in poultry disease monitoring projects Andreia Arruda, *The Ohio State University*

West Nile Virus Infection in Commercial Duck Breeder Flocks

Richard Fulton, Michigan State University

Comparative Analysis of Two New Multilocus Sequence Typing (MLST) Schemes for Characterization of Mycoplasma gallisepticum strains

Mostafa Ghanem, University of Maryland-College Park

MinION Sequencing for Selective and Rapid Detection of Avian Influenza A Virus Iryna Goraichuk, USDA/ARS/SEPRL

Design and evaluation of a device to teach euthanasia of chickens by cervical dislocation Brian Ladman, *University of Delaware*

The Mission and Goals of AAAP's Diversity and Inclusion Taskforce

Valerie Marcano, University of Georgia

Expression and Characterization of Avian Reovirus SigmaC-MBP Fusion Proteins as ELISA Antigens Linda Michel, *The Ohio State University*

Trends in Mycotoxin Contamination in the United States Corn Crop

Chasity Pender, Biomin America Inc.

Characterization of Reoviral Hepatitis and Splenitis in Commercial Turkey Poults

Robert Porter, Univ of Minnesota

Comparison of the Current Serological Monitoring Against Spacial Fixed Serological Monitoring in Poultry Production Units.

Josue Sanchez, IDEXX Laboratories

Fecal Parasite and Select Pathogen ELISA Testing on Wild Turkeys from Middle Tennessee Sierra Slautterback, *University of Tennessee CVM*

GIS Tools for Poultry Health Reporting: Development of an Interactive Web Map for BREWS Nicki Smith, *Georgia Poultry Laboratory Network*

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(904) 425.5735 (Office)

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