AAAP Symposium

An update on Marek's Disease Vaccination, Diagnosis, and Immunosuppression

o JULY 11-14

► AAAP Scientific Program includes 144 oral presentations and 97 poster presentations

# Symposium & Scientific Program

### THE AMERICAN ASSOCIATION OF AVIAN PATHOLOGISTS

promotes scientific knowledge to enhance the health, well-being, and productivity of poultry to provide safe and abundant food for the world.



# Boston, MA July 11-14, 2015

### **AAAP 2015 Annual Meeting**

Boston Convention Center Boston, Massachusetts, USA July 11-14, 2015

Saturday, July 11, 2015 (7:30AM – 12:30PM) AAAP Symposium *An Update on Marek's Disease Vaccination, Diagnosis and Immunosuppression* Boston Convention Center, Room 210A

Saturday, July 11, 2015 (2:00PM – 6:00PM) AAAP Committee Meetings Boston Park Plaza Hotel

Saturday, July 11, 2015 (5:00PM – 6:30PM) **AAAP New Member Meet and Greet** AAAP Members are invited to welcome new members Boston Park Plaza Hotel, Whittier Room(4th Floor)

Sunday-Tuesday, July 12-14, 2015 (8:00AM – 5:30PM) **AAAP Scientific Program** Boston Convention Center 415 Summer St, Boston, MA 02210 Sessions A: Room 210A Sessions B: Room 210C Poster Room: 210B

Sunday, July 12, 2015 (10:00AM – 10:15AM) Reed Rumsey Clinical Research Award Winner: **Jejunal** Length and Weight is Increased in Commercially Raised Turkeys with Depressed Growth.

Seiche C. Genger North Carolina State University, Raleigh, NC Boston Convention Center, Room 210C

Sunday, July 12, 2015 (11:00AM – 11:30AM) Keynote Speaker: **Outreach by our Industry to Improve Household Nutrition and Income by Increasing Returns from Backyard Chickens in Rural Africa.** Jagdev Sharma

Biodesign Institute, Arizona State University, Tempe, AZ Boston Convention Center, Room 210A

Sunday, July 12, 2015 (11:30AM – 12:30PM) **AAAP Business Meeting** Boston Convention Center, Room 210A Sunday, July 12, 2015 (3:00PM – 3:15PM) Richard B. Rimler Memorial Paper: **An Evaluation of Peripheral Blood and Splenic Lymphocyte Proliferation in two Chicken Breeds.** Stivalis Cardenas-Garcia *The University of Georgia, Athens, GA* Boston Convention Center, Room 210C

Monday, July 13, 2015 (11:15AM – 12:00AM) Lasher-Eckroade History Lecture: **Life and Times of Ray Bankowski: 1914 - 1993** Richard H. McCapes *Davis, CA* Boston Convention Center, Room 210A

Monday, July 13, 2015 (12:00PM – 1:45PM) **AAAP Awards Luncheon** Westin Boston Waterfront Hotel, Harbor Ballroom 1&2 425 Summer Street, Boston, MA 02210

Monday, July 13, 2015 (4:15PM – 4:30PM) L. Dwight Schwartz Travel Scholarship Winner: **Development of Real-Time Quantitative RT-PCR Assays to Detect GA07, GA08 and GA13 Infectious Bronchitis Virus Types.** Eric M. Shepherd *The University of Georgia, Athens, GA* 

Boston Convention Center, Room 210A

Monday, July 13, 2015 (4:30PM – 5:30PM) **Wine & Cheese Social in Poster Room** Poster Presenters will be present at their posters during this time. Boston Convention Center, Room 210B

Tuesday, July 14, 2015 (2:15PM – 2:30PM) Reed Rumsey Basic Research Award Winner: Virulence Profiles Characterization of Clinical Strains of Clostridium Perfringens Causing Necrotic Enteritis in Successive Broiler Chicken Flocks Raised without Antibiotics. Eric Parent

*University of Montreal, St. Hyacinthe, Quebec, Canada* Boston Convention Center, Room 210C

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Name of Group	Meeting Date	Beg. Time	End Time	Bea. Time End Time Function Type	Location	Room
AAAP Board of Directors Meetings						
AAAP Board of Directors	Thursday, July 9	7:00am	5:00pm	Board Meeting	Boston Park Plaza	Franklin Room (4th Floor)
AAAP Board of Directors	Friday, July 10	7:00am	5:00pm	Board Meeting	Boston Park Plaza	Franklin Room (4th Floor)
AAAP Past Presidents Luncheon	Tuesday, July 14	1:00pm	2:30pm	Lunch	Westin Waterfront Hotel	Griffin
AAAP Board of Directors	Tuesday, July 14	7:00am	12:00pm	Board Meeting/Breakfast	Westin Waterfront Hotel	Harbor Ballroom 3
Committee Meetings						
Histopathology/Case Report Interest Group	Friday, July 10	10:00am	2:00pm	Committee Meeting	Boston Park Plaza	Georgian Room (Mezzanine)
Awards Committee	Saturday, July 11	2:00pm	3:00pm	Committee Meeting	Boston Park Plaza	Brandeis Room (4th Floor)
Avian Diseases Editorial Board	Saturday, July 11	2:00pm	3:00pm	Committee Meeting	Boston Park Plaza	Cambridge Room (4th Floor)
Avian Diseases Manual Editorial Board	Saturday, July 11	2:00pm	3:00pm	Committee Meeting	Boston Park Plaza	Constitution Room (4th Floor)
Diseases of Public Health Significance	Saturday, July 11	2:00pm	3:00pm	Committee Meeting	Boston Park Plaza	Charles River Room (4th Floor)
Enteric Diseases Committee	Saturday, July 11	2:00pm	3:00pm	Committee Meeting	Boston Park Plaza	White Hill Room (4th Floor)
Legislative Advisory Committee	Saturday, July 11	2:00pm	3:00pm	Committee Meeting	Boston Park Plaza	Cabot Room (4th Floor)
Preceptorship Committee	Saturday, July 11 2:00pm	2:00pm	3:00pm	Committee Meeting	Boston Park Plaza	Back Bay Room (4th Floor)
Toxic, Infectious, Miscellaneous & Emerging Diseases Committee	Saturday, July 11 2:00pm	2:00pm	3:30pm	Committee Meeting	Boston Park Plaza	Beacon Hill Room (4th Floor)
Drugs and Therapeutics Committee	Saturday, July 11 3:00pm	3:00pm	4:00pm	Committee Meeting	Boston Park Plaza	White Hill Room (4th Floor)
Education Committee	Saturday, July 11 3:00pm	3:00pm	4:00pm	Committee Meeting	Boston Park Plaza	Gloucester (4th Floor)
Epidemiology Committee	Saturday, July 11 3:00pm	3:00pm	4:00pm	Committee Meeting	Boston Park Plaza	St. James Room (4th Floor)
Membership Committee	Saturday, July 11 3:00pm	3:00pm	4:00pm	Committee Meeting	Boston Park Plaza	Emerson Room (4th Floor)
Avian Diseases Advisory Board	Saturday, July 11 3:00pm	3:00pm	4:00pm	Committee Meeting	Boston Park Plaza	Cambridge Room (4th Floor)
Tumor Virus Committee	Saturday, July 11	3:00pm	5:00pm	Committee Meeting	Boston Park Plaza	Back Bay Room (4th Floor)
Animal Welfare Committee	Saturday, July 11	3:00pm	5:00pm	Committee Meeting	Boston Park Plaza	Georgian Room (Mezzanine)
Research Priorities Committee	Saturday, July 11	3:00pm	4:00pm	Committee Meeting	Boston Park Plaza	Charles River Room (4th Floor)
Respiratory Diseases Committee	Saturday, July 11	3:00pm	5:00pm	Committee Meeting	Boston Park Plaza	Arlington (Mezzanine)
Committee Review Committee	Saturday, July 11	4:00pm	5:00pm	Committee Meeting	Boston Park Plaza	Brookline (4th Floor)
Food Safety Committee	Saturday, July 11	4:00pm	5:00pm	Committee Meeting	Boston Park Plaza	Beacon Hill Room (4th Floor)
History Committee	Saturday, July 11	4:00pm	5:00pm	Committee Meeting	Boston Park Plaza	St. James Room (4th Floor)
Infectious Bursal Disease Virus Ad hoc Committee	Saturday, July 11	4:00pm	6:00pm	Committee Meeting	Boston Park Plaza	Constitution Room (4th Floor)
Isolation, Identification Manual Editorial Board	Saturday, July 11 4:00pm	4:00pm	5:00pm	Committee Meeting	Boston Park Plaza	Cabot Room (4th Floor)
Program Events						
AAAP Symposium	Saturday, July 11	7:30am	12:30pm	Symposium	Convention Center	210A
Meet and Greet New AAAP Members	Saturday, July 11	5:00pm	6:30pm	Reception	Boston Park Plaza	Whittier Room (4th Floor)
AAAP Awards Luncheon	Monday, July 13	12:00pm	1:45pm	Program	Westin Waterfront Hotel	Harbor Ballroom 1&2
AAAP Business Meeting	Sunday, July 12	11:30am	12:30pm	Meeting	Convention Center	210A
AAAP Wine and Cheese Social in Poster Room	Monday, July 13 4:30pm	4:30pm	5:30pm	Reception/Program	Convention Center	210B

(continued)
<b>Event Schedule</b>
AAAP
2015

Name of Group ACPV	Meeting Date	Beg. Time	End Time	Date Beg. Time End Time Function Type	Location	Room
ACPV Exam #1	Friday, July 10	7:00am	8:00pm	Other (Exam)	Boston Park Plaza	Cambridge Room (4th Floor)
ACPV Exam #2	Friday, July 10	7:00am	8:00pm	Other (Exam)	<b>Boston Park Plaza</b>	Charles River Room (4th Floor)
ACPV Exam #3 Grading Room	Friday, July 10	7:00am	10:00pm	Other (Exam)	<b>Boston Park Plaza</b>	Constitution Room (4th Floor)
ACPV Board of Governors Meeting	Sunday, July 12	6:30am	10:30am	Board Meeting	Westin Waterfront Hotel Commonwealth A	Commonwealth A
ACPV Reception/Annual Meeting	Monday, July 13 6:30am	6:30am	8:00am	Breakfast	Westin Waterfront Hotel Grand Ballroom CD	Grand Ballroom CD
Invitation Only						
Association of Veterinarians in Broiler Production Meeting	Friday, July 10	7:00am	5:00pm	Meeting(Brkft/Lunch)	<b>Boston Park Plaza</b>	Beacon Hill Room (4th Floor)
Association of Veterinarians in Broiler Production Breakfast	Friday, July 10	7:00am	9:00am	Breakfast	<b>Boston Park Plaza</b>	Arlington (Mezzanine)
Association of Veterinarians in Broiler Production Lunch	Friday, July 10	1:00pm	2:00pm	Lunch	<b>Boston Park Plaza</b>	Arlington (Mezzanine)
Association of Veterinarians in Turkey Production	Friday, July 10	9:00am	5:00pm	Meeting	Boston Park Plaza	St. James Room (4th Floor)
Al Outbreak Meeting	Friday, July 10	3:00pm	5:00pm	Meeting	<b>Boston Park Plaza</b>	Georgian Room (Mezzanine)
University of Minnesota Center For Animal Health and Food Safety	Friday, July 10	5:00pm	6:00pm	Committee Meeting	Boston Park Plaza	Arlington (Mezzanine)
Georgia MAM Alumni Breakfast	Saturday, July 11 6:30am	6:30am	7:30am	Breakfast	<b>Boston Park Plaza</b>	Arlington (Mezzanine)
Association of Poultry Primary Breeder Veterinarians	Saturday, July 11	11:30am	1:30pm	Lunch	<b>Boston Park Plaza</b>	Gloucester (4th Floor)
Association of Veterinarians in Egg Production	Sunday, July 12 6:00am	6:00am	8:00am	Breakfast	Westin Waterfront Hotel Grand Ballroom E	Grand Ballroom E



# Shuttle Schedule





MAP #	HOTEL NAME	BOARDING LOCATION	ROUTE
1	Westin Boston Waterfront AVMA Headquarter Hotel	Curbside on Summer St.	Walk 4
2	Boston Park Plaza Hotel* AAAP Headquarter Hotel	Curbside on Columbus Ave.	3
3	Courtyard Boston Downtown	Curbside in front, on Tremont St.	3
4	Doubletree Hotel Boston Downtown	At the Courtyard by Marriott Boston Downtown	3
5	Hilton Boston Downtown / Faneuil Hall	Curbside on Broad St.	1
6	Hyatt Regency Boston	On Chauncey St.	2
7	Intercontinental Boston	Curbside in front	1
8	Omni Parker House	On Tremont near Beacon (outside Santander Bank)	2
9	Renaissance Boston Waterfront	Curbside on Congress	Walk 4
10	Residence Inn by Marriott Boston Downtown Seaport	Curbside on Congress	1
	Revere Hotel	Curbside on Stuart St.	3
12	Seaport Hotel	At Renaissance Boston Waterfront	Events only <b>4</b>
13	W Boston	At Courtyard Boston Downtown	3

### Shuttle Service to the BCEC

Shuttles run every 15-20 minutes between the official AVMA hotels (see Map below) and the BCEC during the convention. The following information (including schedule and boarding locations) is subject to change – please see the sign posted in your hotel lobby for the most current information.

# CONVENTION SHUTTLE SCHEDULE

Friday, 7:30 AM - 7:00 PM

Saturday, 6:00 AM - 7:30 PM

Sunday, 6:00 AM – 7:00 PM

Monday, 6:00 AM - 5:30 PM

Tuesday, 7:00 AM - 5:30 PM

#### EVENT SHUTTLE SCHEDULE

Shuttle service will also be provided between all boarding locations and the following special events. For special events, shuttles will not board at the BCEC, but at the Westin Boston Waterfront.

#### An Unforgettable Evening with the American Veterinary Medical Foundation

Friday, July 10 – John F. Kennedy Presidential Library and Museum

VIP Reception from 6:45-7:30 PM

#### Main Event from 7:30-10:00 PM

VIP Reception Shuttles depart from first stop on each route at 6:15 PM and 6:30 PM, with stops at other hotels on the route shortly thereafter.

Main event shuttles depart at 7:10-8:30 PM, every 15-20 minutes. Return service from the event begins at 8:30-10:00 PM, every 15-20 minutes.

# AVMA Concert Featuring the Beach Boys

Saturday, July 11 – Blue Hills Bank Pavilion

Doors Open 6:00 PM

Concert 7:30-9:30 PM

Shuttles will run from 5:30-10:00 PM, every 15-20 minutes.

Please note: guests staying at the Seaport Hotel and Renaissance Boston Waterfront have the option to walk to/from the event, located less than a half-mile from these hotels.





2014-2015 AAAP Foundation Board of Directors

www.aaap.info/foundation

Frederic J. Hoerr President

Robert L. Owen Past President

Francene S. Van Sambeek AAAP President 2015

**Robert E. Porter** AAAP President-Elect 2015

**Charles L. Hofacre** Executive Vice President

**Eva Wallner-Pendleton** Director - Northeast 2017

**Eric L. Jensen** Director - South 2018

**Eric Gingerich** Director - Central 2015

Victoria A. Bowes Director - Western 2016

Sara J. Steinlage Director-at-Large 2015

lan Rubinoff Director-at-Large 2016

**Richard (Mick) Fulton** Past President 2015

### **AAAP Representatives to AVMA**

AVMA Animal Agriculture Liaison Sara T. Steinlage 2015 Karen Grogan 2015 (Alternate)

AVMA Animal Welfare Committee Michael P. Martin 2016 Kate Barger 2016 (Alternate)

AVMA Clinical Practitioners Advisory Committee Hector M. Cervantes 2017

AVMA Committee for Disaster and Emergency Issues Jarra Jagne 2016

AVMA Convention Management and Program Committee John Smith 2015 AVMA Food Safety Advisory Committee Suzanne Y. Dougherty 2015 Charles L. Hofacre 2016 (Alternate)

**AVMA House of Delegates** Y. M. Saif 2015 Gregg J. Cutler 2015 (Alternate)

AVMA Legislative Advisory Committee Gregg J. Cutler 2015 Bruce Stewart-Brown 2016 (Alternate)

AVMA Steering Committee on FDA Policy on Veterinary Oversight of Antimicrobials Charles L. Hofacre 2015

### **AAAP Representatives to Allied Organizations**

**Council for Agriculture Science and Technology (CAST)** Robert D. Evans 2016

Professional Animal Auditor Certification Organization (PAACO) James T. Barton 2016 David Pyle 2015 David R. Hermes 2014 United States Animal Health Association (USAHA) Eric Gingerich 2016 Transmissible Diseases of Poultry and Other Avian Species Dale C. Laurer, Chair

Animal Agriculture Coalition (AAC) Gregg J. Cutler

### **AAAP Foundation Committee Chairs**

www.aaap.info/aaapawards

Awards Kate Barger 2017

Poultry Scholarship Mark Bland

Kenneth Eskelund Preceptorship Francene S. Van Sambeek

## **AAAP Constitutional Committee Chairs**

www.aaap.info/committees

Auditing Karen Burns Grogan

Nominating Stewart Ritchie Resolutions Frederic J. Hoerr

## **AAAP Task Force Committee Chairs**

Animal Welfare and Management Practices Helen Wojcinski 2015

**Diseases of Public Health Significance** Frank W. Pierson 2016

**Drugs and Therapeutics** Steven Clark 2016

EducationGabriel Senties-Cue2016Pat Wakenell2016

**Enteric Diseases** Marco Quiroz 2016

**Epidemiology** Jean-Pierre Vaillancourt 2016

**Food Safety** James T. Barton 2016

History of Avian Medicine John R. Dunn 2016

**Legislative Advisory** Suzanne Y. Dougherty 2018 Membership Deirdre Ida Johnson 2016

**Program Advisory** John Smith 2015

**Respiratory Diseases** Mark Jackwood 2017

**Research Priorities** Danny Magee 2015

**Tumor Virus** Arun R. Pandiri 2015

**Toxic, Infectious, Miscellaneous and Emerging Diseases** Hyatt Abbassi 2015

AAAP Interest Group Chairs Histopathology/Case Report Interest Group H.L. Shivaprasad

### 2014-2015 AAAP Board of Directors

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Francene S. Van Sambeek President 2015

> **Robert E. Porter** President-Elect 2015

**Charles L. Hofacre** Executive Vice President

**Eva Wallner-Pendleton** Director - Northeast 2017

**Eric L. Jensen** Director - South 2018

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Victoria A. Bowes Director - Western 2016

lan Rubinoff Director-at-Large 2016

Sara J. Steinlage Director-at-Large 2015

**Richard (Mick) Fulton** Past President 2015

### **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

**Biosecurity Manual Board** Robert L. Owen **Diseases of Poultry Editorial Board** David E. Swayne

**Isolation of Avian Pathogens Manual Board** Susan Williams

# AAAP Symposium

# An Update on Marek's Disease Vaccination, Diagnosis and Immunosuppression

### Saturday, July 11, 2015 (7:30AM – 12:30PM) Room 210A

7:30- 7:35 AM	Introduction & Welcome Arun Kumar R. Pandiri, <i>Experimental Pathology Laboratories, Inc., Durham,</i> NC
Moderators	Aly Fadly & Susan Williams
7:35- 7:50 AM	<b>Status Update on Worldwide Incidence of MD, PN, LL/ML, RE, HS Syndrome and Combinations</b> John R. Dunn, USDA-ARS Avian Disease & Oncology Laboratory, 4279 E Mount Hope Rd, East Lansing, MI
7:50- 8:05 AM	<b>MD and Other Neoplastic Disease Situations in Backyard Flocks</b> Patricia Wakenell, <i>Purdue University ADDL, West Layfette, IN</i>
8:05- 8:40 AM	<b>Differential Diagnosis of Tumor Diseases in Chickens</b> Arun Kumar R. Pandiri, <i>Experimental Pathology Laboratories, Inc., Durham, N</i> C
8:40- 9:15 AM	<b>A Stepwise Diagnostic Approach to Investigate a Marek's Disease Outbreak</b> Isabel M. Gimeno, North Carolina State University, College of Veterinary Medicine, Raleigh, NC
9:15- 9:50 AM	<b>Subclinical Immunosuppression and Marek's Disease Virus</b> Karel A. Schat, Department of Microbiology and Immunology, College of Veterinary Medicine, Cornell University, Ithaca, NY
9:50- 10:10 AM	Questions and Answers for the First Four Talks
10:10- 10:30 AM	Break
Moderators	Gregorio Rosales & Guillermo Zavala
Moderators 10:30- 11:05 AM	Gregorio Rosales & Guillermo Zavala An Update on Marek's Disease Vaccines Sanjay M. Reddy, Department of Veterinary Pathobiology, College of Veterinary Medicine & Biomedical Sciences, Texas A&M University, College Station, TX
	An Update on Marek's Disease Vaccines Sanjay M. Reddy, Department of Veterinary Pathobiology, College of Veterinary Medicine & Biomedical Sciences, Texas
10:30- 11:05 AM	An Update on Marek's Disease Vaccines Sanjay M. Reddy, Department of Veterinary Pathobiology, College of Veterinary Medicine & Biomedical Sciences, Texas A&M University, College Station, TX Round Table Discussion on the Impact of New Vaccines on Marek's Disease Protection <u>Co-Chairs:</u> Ruud Hein Gregorio Rosales Guillermo Zavala Representatives from: Ceva - Marcelo Paniago Elanco - Jim Stockam Merck - Rik Koopman Merial - Enrique Montiel
10:30- 11:05 AM 11:05 AM - 12:10 PM	An Update on Marek's Disease Vaccines Sanjay M. Reddy, Department of Veterinary Pathobiology, College of Veterinary Medicine & Biomedical Sciences, Texas A&M University, College Station, TX Round Table Discussion on the Impact of New Vaccines on Marek's Disease Protection Co-Chairs: Ruud Hein Gregorio Rosales Guillermo Zavala Representatives from: Ceva - Marcelo Paniago Elanco - Jim Stockam Merck - Rik Koopman Merial - Enrique Montiel Zoetis - Kalen Cookson





	Room 210 A	Room 210 C	
Topic	Coccidiosis	Mycoplasma	
Moderator	Travis Cigainero	Louise Dufour-Zavala	
8:00 AM	Vaccination of broiler chickens against coccidiosis may ameliorate drug-resistance in Eimeria H. David Chapman and Thomas K. Jeffers, Department of Animal Science, University of Arkansas, Fayetteville, AR	Horizontal Transmission Characteristics of Recent Mycoplasma synoviae Isolates Natalie K. Armour and Naola Ferguson-Noel, Poultry Diagnostic and Research Center, Department of Population Health, College of Veterinary Medicine, University of Georgia, Athens, GA	
8:15 AM	<b>Vaccination of Chickens Against Coccidiosis Ameliorates Drug</b> <b>Resistance in Commercial Poultry Production</b> H. David Chapman and Thomas K. Jeffers, <i>Department of Animal Science, University of Arkansas,</i> <i>Fayetteville, AR</i>	Unexpected Seroconversion Against a Live Temperature-Sensitive Mycoplasma gallisepticum Vaccine in Organic Brown Layers Guillermo Zavala, Naola Ferguson-Noel, Len Chappell and Louise Dufour Zavala, Avian Health International, LLC, Flowery Branch, GA	
8:30 AM	<b>Comparison of Three Different Broiler Coccidial Vaccines in</b> <b>Commercial Broilers Grown in a High Clostridial Challenge Area</b> G. Donald Ritter, <i>Mountaire Farms Inc., Millsboro, DE</i>	Real-time PCR reagents for simultaneous detection and differentiation of Mycoplasma gallisepticum and Mycoplasma synoviae Kristen Roza, Michael Angelichio, Lori Plourde, Kathy Velek Lisa Gow, Martina Kahila and Valerie Leathers, <i>IDEXX Laboratories, Inc.</i> <i>Westbrook, ME</i>	
8:45 AM	<b>Evaluation of Zoamix® in Broiler Anticoccidial Programs</b> Jon L. Schaeffer, Kalen Cookson, John Dickson, Greg Mathis and Stephen W. Davis, <i>Zoetis US Poultry, Durham, NC</i>	<b>Development of Multilocus Sequence Typing (MLST) for Mycoplasma</b> <b>iowae</b> Mostafa Ghanem and Mohamed El-Gazzar, Department o Veterinary Preventive Medicine, College of Veterinary Medicine, The Ohio State University, Columbus, OH	
9:00 AM	Anticoccidial Sensitivity Testing, Supplemented with PCR and Microscopic Evaluations, of USA Broiler Isolates Marco Quiroz, Steven R. Clark, John Dickson, Emily Kimminau, Manuel Da Costa, Miguel Barrios, and A. Lorraine Fuller, <i>Zoetis, US Poultry, Durham, NC</i>	Development of Mycoplasma gallisepticum ts-11 Vaccine Strair Specific PCR Protocols Naola Ferguson-Noel, Camir Ricketts, Larissa Pickler, Saravanaraj Ayyampalayam, and John Maurer, Poultry Diagnostic & Research Center, Department of Population Health, College of Veterinary Medicine, University of Georgia, Athens, GA	
9:15 AM	Bro	eak	
Торіс	Coccidiosis (continued)	Mycoplasma/ Gut Health	
Moderator	Donald Ritter	Natalie Armour	
9:30 AM	A Combining an Oregano Oil Derived Feed Additive and a Coccidiosis Vaccine: Measuring Oocyst Production and Evaluation of the Protection toward a Coccidiosis Challenge Alexis Kiers, Samantha Pohl, and Steve Collett, PDRC, University of Georgia, Athens, GA Contribution of Mycoplasma Intensification Program in the Gainesville, GA		
9:45 AM	Microscopic Eimeria maxima: Comparing serial intestinal scrapings to composite samples and comparing production data to those findings. Francene Van Sambeek, <i>Elanco Animal Health, Cullman, AL</i>	The Role of Gut Health in Today's Poultry Jocelyn Romano, Alltech Poultry Technical Support, Raleigh, NC	
10.00 414	Epidemiology of Avian Coccidiosis on Commercial Broiler Farms	Reed Rumsey Clinical Research Award Winner Jejunal Length and Weight is Increased in Commercially Raised	
10:00 AM	Mark Jenkins and Raymond Fetterer, Animal Parasitic Diseases Laboratory, Agricultural Research Service, USDA, Beltsville, MD	Oscar J. Fletcher, Michael P. Martin, Dennis P. Wages, and Jen Strickland	
10:00 AM	Mark Jenkins and Raymond Fetterer, Animal Parasitic Diseases Laboratory,	Turkeys with Depressed Growth Seiche C Genger, H. John Barness Oscar J. Fletcher, Michael P. Martin, Dennis P. Wages, and Jen Strickland North Carolina State University, Department of Population Health and Pathobiology, Raleigh, NC Immune role of gut microbiota and effect of dietary capsicum and turmeric oleoresins on necrotic enteritis susceptibility in three commercial broiler chicken breeds Ji Eun Kim, Hyun S. Lillehoj, Sung Hyen Lee, Erik P. Lillehoj, and David Bravo, Animal Biosciences and Biotechnology Laboratory, USDA-ARS, Beltsville, MD	
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10:15AM 10:30 AM 10:45 AM	Mark Jenkins and Raymond Fetterer, Animal Parasitic Diseases Laboratory, Agricultural Research Service, USDA, Beltsville, MD Recommendations for Effective Coccidiosis Vaccination: Positive Results from the US Broiler Industry Blayne Mozisek, Merck Animal Health, Austin, TX Nicarbazin Responses in Two Temperature Environments II: Effects of Coccidial Challenge K. Bafundo, M. da Costa, E. Kimminau, L. Fuller, H. Cervantes and G.Pesti, Phibro Animal Health Corporation, Teaneck, NJ Bro	<ul> <li>Oscar J. Fletcher, Michael P. Martin, Dennis P. Wages, and Jen Strickland North Carolina State University, Department of Population Health and Pathobiology, Raleigh, NC</li> <li>Immune role of gut microbiota and effect of dietary capsicum and turmeric oleoresins on necrotic enteritis susceptibility in three commercial broiler chicken breeds Ji Eun Kim, Hyun S. Lillehoj, Sung Hyen Lee, Erik P. Lillehoj, and David Bravo, Animal Biosciences and Biotechnology Laboratory, USDA- ARS, Beltsville, MD</li> <li>Fungal and bacteria gastrointestinal tract populations and their associations with fungal populations within poultry and the poultry house environment J. Allen Byrd, USDA, ARS, Food and Feed Safety Research Unit, College Station, TX</li> </ul>	
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# Sunday, July 12, 2015 (continued)

	Room 210 A	Room 210 C
Торіс	Case Reports	Newcastle Disease Virus
Moderator	Chad Malinak	Ivan Alvarado
1:30 PM	<b>Leg problems from salmonella control in feed. What???</b> Armando Mirande, <i>Supervet, Inc., The Woodlands, TX</i>	Immunization of Day-Old Chickens with Lentogenic Enterotropic Newcastle Disease Virus Recombinant Expressing Chicken Parvovirus VP2 Protein Laszlo Zsak, Stephen J. Spatz, and Qingzhong Yu, Southeast Poultry Research Laboratory, Agricultural Research Service, United States Department of Agriculture, Athens, GA
1:45 PM	A Case of Ascites and Associated Feed Mill Pathology in Broilers Joel L. Cline, John S. Roberts, Heidi H. Rose, and Sandra E. Mann, J. B. Taylor Diagnostic Laboratory, Alabama Department of Agriculture, Elba, AL	Infection and transmission of live recombinant Newcastle disease virus vaccines in Rock Pigeons, European House Sparrows and Japanese Quail Patti J. Miller, Diego G. Diel, Krishna Hamal, Timothy L. Olivier, Stivalis Cardenas-Garcia, Valerie C. Marcano, Claudio L. Afonso, and David L. Suarez, <i>Southeast Poultry Research Laboratory, Athens, GA</i>
2:00PM	<b>Case Report: Calcium toxicity in broilers</b> Erin Riley, Phil Stayer, and David French, <i>Sanderson Farms Inc., Hattiesburg, MS</i>	Autogenous vaccine development in protection and immunomodulation against velogenic Newcastle Disease in broilers Elie K. Barbour, Mohamad Murtada, Houssam Shaib, Steve Harakeh and Taha Kumosani, Department of Agriculture, Faculty of Agricultural and Food Sciences, American University of Beirut, Beirut, Lebanon
2:15PM	<b>Case Report: Spotty Livers in Broilers</b> David French, Philip A. Stayer, Erin G. Riley, Stanley VanHooser, and Floyd Wilson, <i>Sanderson Farms, Inc.,</i> <i>Hattiesburg, MS</i>	Vaccination of hens decreases virus contamination in eggs after challenge with the virulent Newcastle disease virus David E Swayne, Mariana Sá e Silva, Leonardo Susta, and Kira Moresco, <i>Southeast Poultry</i> <i>Research Laboratory, USDA-ARS, Athens, GA</i>
2:30 PM	Gallibacterium anatis Causing nervous symptoms in broiler chickens- case report Martha Pulido-Landínez Catalina Torres, Laboratory of Avian Pathology, College of Veterinary Medicine, National University of Colombia, Bogotá, Colombia	Vaccine trials for virulent Newcastle disease viruses from Tanzania David L. Suarez, Patti Miller, Peter Msoffe, and Gaspar Honoroti, Southeast Poultry Research Laboratory, Athens, GA
2:45 PM	An unusually widespread outbreak of Gangrenous Dermatitis in broiler chickens H. L. Shivaprasad and Rute Noiva, University of California, Davis, CA	Genetic Diversity of Newcastle Disease Virus in Colombian Poultry Andres Rodriguez-Avila, Gerardo Quiñones-Chois, Nathalia Bermudez- Chavez, Diego Hernandez-Cuellar, Javier Gomez-Meza, Marco Gomez, Laboratorio de Diagnostico BioARA S.A., Bogota, Columbia
3:00 PM	<b>Unusual mite infestation in broiler chickens</b> C. Gabriel Sentíes-Cué, Silvia Carnaccini, Amy C. Murillo and Charles Corsiglia, <i>California Animal</i> Health & Food Safety Laboratory System (CAHFS), Turlock Branch, School of Veterinary Medicine, University of California, Davis, CA	Richard B. Rimler Memorial Paper * An evaluation of peripheral blood and splenic lymphocyte proliferation in two chicken breeds Stivalis Cardenas-Garcia, Robert P. Dunwoody, Robert J. Williams, Patti J. Miller, Corrie C. Brown, Claudio L. Afonso and Robert M. Gogal Jr., College of Veterinary Medicine, The University of Georgia, Athens, GA
3:15 PM	Br	eak
Торіс	Case Reports (continued)	Marek's Disease Virus/ Immunology
Moderator	Erin Riley	Kristen Roza
3:30 PM	<b>Acute lasalocid toxicity in market age commercial tom turkeys</b> David A Pyle, Richard M. Fulton, <i>Michigan State University, Zeeland, MI</i>	Use of a Sanitization Device in the Marek's Vaccination Machine And Impact on the Marek's Vaccine Applied at One Day of Age Alexandra M. Mendoza-Reilley, Ivan Alvarado, Ernst Van Gulijk and Holly Sellers, Merck Animal Health, Athens, GA
3:45 PM	<b>Cystic Enteritis in Turkey Poults</b> H. L. Shivaprasad, Univeristy of California, Davis, CA	Do Marek's Disease Vaccines Protect Against Marek's Disease Virus- Induced Immunosuppresssion? Nik M. Faiz, A.L. Cortes, J.S. Guy, M. West, T. Cimino, and I. M. Gimeno, Department of Population Health and Pathobiology, College of Veterinary Medicine, North Carolina State University, Raleigh, NC
4:00 PM	<b>Pox and Suspected Lymphoproliferative Disease of Turkeys in a Domestic Turkey</b> R. Mick Fulton, Aly Fadly, and Andrew Allison, <i>Michigan State University, Lansing, Ml</i>	Efficacy of a BAC clone of a recombinant strain of Marek's disease virus containing reticuloendotheliosis virus LTR following in ovo vaccination at 18 days of embryonation Aly Fadly and Jody Mays, USDA-ARS Avian Disease and Oncology Laboratory East Lansing, MI

# Sunday, July 12, 2015 (continued)

	Room 210 A	Room 210 C
Торіс	Case Reports (continued)	Marek's Disease Virus/ Immunology (Continued)
Moderator	Erin Riley	Kristen Roza
4:15 PM	<b>West Nile Virus Infection in Domestic Turkeys?</b> R. Mick Fulton and Matti Kiupel, <i>College of Veterinary Medicine, Michigan State University, East Lansing, MI</i>	Improving the safety and efficacy of Marek's disease virus candidates vaccines Blanca Lupiani, Aijun Sun, Owais Khan, Guoqing Zhuang and Sanjay M. Reddy, Department of Veterinary Pathology, College of Veterinary Medicine & Biomedical Science, Texas A&M University, College Station, TX
4:30 PM	Sporadic Outbreaks of Histomoniasis in Turkey Breeder Replacements David V. Rives, Prestage Farms, Inc., Clinton, NC	Development of chicken IL-8 (CXCLi2)-specific Luminex <sup>™</sup> assay Hyun S Lillehoj, Ji Eun Kim, Yaeseul Lim, Misun Jung, and Sung Hyun Lee, Animal Biosciences and Biotechnology Laboratory, Beltsville, MD
4:45 PM	<b>Clinical case report on high mortality of ducks in India</b> Vijay Durairaj, Monique S. Franca, Arun Prasath G and Holly S. Sellers, <i>Poultry Diagnostic</i> <i>and Research Center, Department of Population Health, College of Veterinary</i> <i>Medicine, The University of Georgia, Athens, GA</i>	Immunoprotective effects of oligodeoxynucleotides containing CpG motifs (CpG-ODN) against viral diseases in broiler chickens Thushari Gunawardana, Marianna Foldvari, Shelly Popowich, Suresh K.Tikoo, Philip Willson, Betty Chow-Lockerbie, Shanika Kurukulasuriya, Ashish Gupta and Susantha Gomis, Department of Veterinary Pathology, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, SK, Canada
5:00 PM	Investigation of a suspected Lipid storage disease in a Hawai'ian Nene goose (Branta sandvicensis). Douglas A Anderson, Oscar J Fletcher, H John Barnes, and Louise Dufour-Zavala., <i>Georgia Poultry</i> Laboratory Network, Gainesville, GA	Metabolomic serum profile of neonatal broiler chickens following administration of oligodeoxynucleotides containing CpG motifs (CpG-ODN) as an innate immune stimulator Kalhari Goonewardene, Thushari Gunawardana, Rupasri Mandal, Shelly Popowich, Suresh K Tikoo, Marianna Foldvari, Philip Willson, David S. Wishart, and Susantha Gomis, Department of Veterinary Pathology, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, SK, Canada
5:15 PM	<b>A Moderate Voice in the Animal Welfare Conversation</b> Marion Garcia, Robin Ganzert, and Michelle Ganci, <i>American Humane Association</i> , <i>Washington DC</i>	<b>Plasma Proteomic changes in chickens with bacterial</b> <b>lipopolysacharide treatment</b> N. C. Rath, B. Packialakshmi, R. Liyanage, S. Makkar, and J. O. Lay, Jr., <i>Cell and Molecular Biology Program, Department</i> <i>of Poultry Science, and Sate Wide Mass spectrometry Lab, University of</i> <i>Arkansas, Fayetteville, AR</i>
5:30 PM	Adj	ourn



# Monday, July 13, 2015



	Room 210 A	Room 210 C
Topic	Case Reports	Avian Influenza
Moderator	Charles Broussard	Mohamed El-Gazzar
8:30 AM	Hemorrhagic Hepatopathy Syndrome in Salmonella Enteritidis vaccinated pullets in California, 2013-2014. Silvia Carnaccini, H. L. Shivaprasad, Greg Cutler, Scott P. Kenney, X. J. Meng, Bruce Charlton, and C. Gabriel Sentíes-Cué, California Animal Health and Food Safety Laboratory System, School of Veterinary Medicine, University of California Davis, CA	<b>Live Bird Markets, Disease Surveillance and e-Learning</b> S. C. Trock and J. A. Zingeser, <i>Centers for Disease Control and Prevention, Fayetteville,</i> <i>GA</i>
8:45 AM	Broiler Breeders Dropping in Production due to Two Subsequent Stressor Factors Beatriz Cardoso, Virginia Leo Almeida Pereira, and Carlos Gomes, Poultry Health Department, College of Veterinary Medicine, Universidade Federal Fluminense, Niterói, Brazil	The North American incursion of a novel reassortant HPAI H5N2 or Eurasion H5N8 lineage: the British Columbia outbreak overview Victoria Bowes, Tomy Joseph, Jane Pritchard, Bill Cox, Nancy DeWith, and Erin Zabek, <i>BC Ministry of Agriculture, Animal Health Branch, Abbotsford</i> <i>BC, Canada</i>
9:00 AM	<b>Inside out</b> Dr. Jenny Fricke, Poultry Extension Veterinarian, University of Saskatchewan, Saskatoon, Canada	Pathogenesis and Transmission of the 2014 Intercontinental H5 Highly Pathogenic Avian Influenza Viruses (H5N8 and H5N2) ir Gallinaceous Poultry Erica Spackman, David E. Swayne, David L Suarez, Mary Pantin-Jackwood, Darrell R. Kapczynski, Kateri Bertran and Sasidhar Malladi, Southeast Poultry Research Laboratory, USDA Agricultural Research Service, Athens, GA
9:15 AM	<b>Hepatic and Pulmonary Hemangiosarcoma in a Backyard Chicken</b> Nobuko Wakamatsu, Nicholas Crossland, Max Rinaldi, and Susan Williams, Departments of Pathobiological Sciences and Veterinary Comparative Medicine, School of Veterinary Medicine, Louisiana State University, Baton Rouge, LA	Pathogenesis and Transmission of the 2014 Intercontinental H5 Highly Pathogenic Avian Influenza Viruses (H5N8 and H5N2) ir Mallards Mary J. Pantin-Jackwood, Erica Spackman, Darrell Kapzcynski David Suarez, Mar Costa-Hurtado, Eric DeJesus, Eric Shepherd, Diane Smith, and David Swayne Southeast Poultry Research Laboratory, USDA Agricultural Research Service, Athens, GA
9:30 AM	Listeria monocytogenes Infections in Backyard Layer Flocks – More Than a Sporadic Disease? Jarra F. Jagne, Elizabeth L. Buckles, Julia Fernandez, Andrew Miller and Heather Daverio, Cornell University Animal Health and Diagnostic Center, College of Veterinary Medicine, Ithaca, NY	Characterization of a LPAI H5N8 Outbreak in Commercial Quai Layers in the Central Valley of California, 2014. Silvia Carnaccini Beate Crossley, Mia K. Torchetti, Bruce Charlton, Mark Bland, Richard Breitmeyer and C. Gabriel Senties-Cue, California Animal Health and Food Safety Laboratory System, School of Veterinary Medicine, University of California, Davis, CA
9:45 AM	Break	
Торіс	Infectious Bronchitis Virus	Avian Influenza (continued)
Moderator	Kevin Maschek	Becky Tilley
10:00 AM	<b>Cross-protection of different IBV vaccine combinations in broilers</b> Taylor Barbosa, Kalen Cookson, John Dickson, Lauren Preskenis, Marcy Murphy, Miguel Ruano, Brian Ladman, and Jack Gelb, <i>Zoetis Global</i> <i>Poultry, Durham, NC</i>	<b>Evaluation of different Avian Influenza H9N2 challenge models in</b> <b>commercial broilers.</b> Andrea Delvecchio, Laure Vinit, Guillaume Noe Michel Bublot, François-Xavier Le Gros, Francesco Prandini, Andrea Herrmann, and Stephane Lemiere, <i>MERIAL SAS, Lyon, France</i>
10:15AM	New insight into Protectotype strategy as a tool in chicken Infectious Bronchitis (IB) control Smialek Marcin, Tykalowski Bartlomiej, Stenzel Tomasz, Pestka Daria, Furmanek Danuta, and Koncicki Andrzej, Department of Poultry Diseases, Faculty of Vaterinary Medicine, University of Warmia and Mazury, Olsztyn, Poland	Protective Efficacy of Recombinant and Inactivated H5 Avian Influenza Vaccines Against Challenge from the 2014 Intercontinenta H5 Highly Pathogenic Avian Influenza Viruses (H5N8 and H5N2 Darrell R. Kapczynski, Erica Spackman, Mary J. Pantin-Jackwood, Davia L. Suarez, and David E. Swayne, Southeast Poultry Research Laboratory USDA-ARS, Athens, GA
10:30AM	<b>Evaluation of the protection against a GA08-like infectious bronchitis</b> <b>field Isolate in broiler chickens vaccinated with combinations of</b> <b>Massachusetts, Holland, Arkansas DPI or Ga08 serotypes.</b> Alejandro Banda, Kalen Cookson, Timothy Cummings, Floyd Wilson, Kevin Maschek, Miles Hill, and Lifang Yan., <i>Poultry Research and Diagnostic Laboratory</i> <i>College of Veterinary Medicine, Mississippi State University, Pearl, MS</i>	Pre-infection of Tracheal Organ Culture with Mycoplasma gallisepticum Modulates the Outcome of Secondary Low Pathogenie Avian Influenza Virus Infection Silke Rautenschlein, Hicham Sid Sandra Hartmann, Henning Petersen, and Martin Ryll, Clinic for Poultry University of Veterinary Medicine, Hannover, Germany
10:45AM	Pathogenesis of an enteric coronavirus (IBV) isolated from broiler chicks in SPF chicks. H L Shivaprasad and Rodrigo Gallardo, University of California, Davis, CA	Two HA2 mutations enable adaptation of a duck influenza virus to swine respiratory cells Vincent Bourret, Jon Lyall, Simon Frost Angélique Teillaud, JinQi Fu, Laurence Tiley, and Jean-Luc Guérin Université de Toulouse, Toulouse, France
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# Monday, July 13, 2015 (continued)

Moderator	Celina Buscaglia		
11:15 AM	Lasher-Eckroade History Lecture: <b>Life and</b> Richard H. McCapes, Dav	<b>l Times of Ray Bankowski: 1914 - 1993</b> ris, CA. <b>Rooms 210</b> A	
12:00 PM	AAAP Award Westin Boston Waterfront R		
	Room 210 A	Room 210 C	
Торіс	Infectious Bronchitis Virus (continued)	Avian Influenza (continued)	
Moderator	Kalen Cookson	Mary Pantin-Jackwood	
2:00 PM	<b>Resurgence of Infectious Bronchitis Virus Nephropathogenicity in Delmarva Broiler Chickens</b> Erin M. Brannick, Daniel A. Bautista, Brian S. Ladman, Lauren A. Preskenis, J. Miguel Ruano, Marcella M. Murphy, and Jack Gelb, Jr., <i>Avian Biosciences Center, Department of Animal and Food Sciences, University of Delaware, Newark, DE</i>	Intercontinental Spread of Asian-origin H5 Clade 2.3.4.4 High Pathogenicity Avian Influenza Virus to North America through Beringia by Migratory Birds Dong-Hun Lee, Mia Kim Torchetti, Kevin Winker, Hon S Ip, Chang-Seon Song, and David E Swayne, Southeast Poultry Research Laboratory, Agricultural Research Service, U.S. Department of Agriculture, Athens, GA	
2:15 PM	<b>IBV 4/91 Infection in Ontario's Broiler Flocks: Clinical Signs and Pathologic lesions</b> Emily Martin, Marina Brash, Margaret Stalker, Sarah Hoyland, Jane Coventry, Christian Sandrock, and Davor Ojkic, <i>Animal Health Laboratory, University of Guelph, Guelph, Ontario, Canada</i>	Use of enzyme-linked immunoassays for the quantitation of hemagglutinin in H5N1 avian influenza vaccines Eric DeJesus, Diane Smith, Mar Cost-Hurtado, Samir A. Nassif, David Swayne and Mary Pantin-Jackwood, Southeast Poultry Research Laboratory, Exotic and Emerging Avian Viral Diseases Unit. USDA-Agricultural Research Service, Athens, GA	
2:30PM	Infectious Dose of Infectious Bronchitis Virus Arkansas-DPI Vaccine given by a Hatchery Spray Cabinet Mark W. Jackwood, Christina M. Leyson, and Brian J. Jordan, Poultry Diagnostic and Research Center, Department of Population Health, College of Veterinary Medicine, University of Georgia, Athens GA	<b>Potential role of interferon as adjuvant for influenza vaccine</b> Chang- Won Lee, John M. Ngunjiri, Hyesun Jang, Kyung-il Kang, and Elaish Mohamed, Food Animal Health Research Program, Ohio Agricultural Research and Development Center, The Ohio State University, Wooster, OH	
2:45 PM	Modification of a Hatchery Vaccine Spray Cabinet to Improve Infectious Bronchitis Virus Application Problems Brian J. Jordan, Eric M. Shepherd, Grace Ashby, Deborah A. Hilt, and Mark W. Jackwood, PDRC Department of Population Health, College of Veterinary Medicine, and Department of Poultry Science, College of Agricultural and Environmental Sciences, The University of Georgia, Athens, GA	Nanoparticle based Avian influenza vaccine, immunogenicity and protection studies in SPF chickens Mazhar I. Khan, Jianpin Li, Peter Burkhard, S. Emadi, Qing Fan, Zeinab, Helal, B. S. Ladman, and Jack Gelb, Jr., University of Connecticut, Storrs, CT	
3:00 PM	Break		
	Infectious Bronchitis Virus (continued)	Virology	
Торіс	Brian Jordan	Vijay Durairaj	
3:15 PM	Adaptation of Embryo Attenuated Arkansas IBV Vaccine to Kidney Cells Reduces Population Heterogeneity H. Toro, A.M. Ghetas, G.E. Thaxton, and V.L. van Santen, <i>Department of Pathobiology, College of</i> <i>Veterinary Medicine, Auburn University, AL</i>	Molecular typification and Characterization of Fowl adenovirus isolates in Peru Milagros Zavaleta, Carla Perinango, Luis E. Saravia, Francesca Falconi-Agapito, Eliana Icochea, and Manolo Fernández-Díaz, FARVET S.A.C., Lima, Peru	
3:30 PM	A Vaccination Strategy Utilizing a DNA Vaccine to Protect Against Variant Strains of IBV Grace Ashby, Deborah A. Hilt, Mark W. Jackwood, and Brian J. Jordan, Poultry Diagnostic and Research Center, Department of Population Health, College of Veterinary Medicine and Department of Poultry Science, College of Agricultural and Environmental Sciences, The University of Georgia, Athens GA	Fowl adenovirus (FAdV) shedding in broiler breeders following infection with FAdV8ab Ashish Gupta, Shelly Popowich, Davor Ojkic, Suresh K. Tikoo, Philip Willson, Betty Lockerbie, Jasna Afic and Susantha Gomis, Department of Veterinary Pathology, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, Canada	
3:45 PM	Polymorphisms in the S1 Spike Glycoprotein of Arkansas-type Infectious Bronchitis Virus Show Differential Binding to Various Chicken Tissues Christina M. Leyson, Brian J. Jordan, and Mark W. Jackwood, Poultry Diagnostic and Research Center, Department of Population Health, College of Veterinary Medicine, University of Georgia, Athens, GA		
3:45 PM 4:00 PM	Infectious Bronchitis Virus Show Differential Binding to Various Chicken Tissues Christina M. Leyson, Brian J. Jordan, and Mark W. Jackwood, Poultry Diagnostic and Research Center, Department of Population Health, College of Veterinary Medicine, University of Georgia,	Enteritis Virus on RP19 B-Lymphoblastoid Cells H. M. Mahsoub, N. P. Evans, R. J. Avery, L. Yuan, K. Zimmerman, and F. W. Pierson, <i>Department</i> of Population Health Sciences, Virginia-Maryland College of Veterinary Medicine, Virginia Tech, Blacksburg, VA Comparative Genomic Analysis of Novel Avipoxvirus Isolates. Deoki	
	<ul> <li>Infectious Bronchitis Virus Show Differential Binding to Various Chicken Tissues Christina M. Leyson, Brian J. Jordan, and Mark W. Jackwood, Poultry Diagnostic and Research Center, Department of Population Health, College of Veterinary Medicine, University of Georgia, Athens, GA</li> <li>Major Histocompatibility Complex and Genetic Resistance Towards Infectious Bronchitis Virus Rodrigo A. Gallardo, Ying Wang, K. Smith, and H. Zhou, Department of Population Health and Reproduction, School</li> </ul>	<ul> <li>Enteritis Virus on RP19 B-Lymphoblastoid Cells H. M. Mahsoub, N. P. Evans, R. J. Avery, L. Yuan, K. Zimmerman, and F. W. Pierson, Department of Population Health Sciences, Virginia-Maryland College of Veterinary Medicine, Virginia Tech, Blacksburg, VA</li> <li>Comparative Genomic Analysis of Novel Avipoxvirus Isolates. Deoki N. Tripathy, Gerald F Kutish, Dan L. Rock, Claudio L. Afonso and Diego G. Diel, College of Veterinary Medicine, University of Illinois, Urbana, IL</li> <li>Investigating the avian enteric picornaviruses in turkeys and chickens: viral community analyses and potential roles in pathogenesis Michael Day and Laszlo Zsak, United States Department</li> </ul>	
4:00 PM	<ul> <li>Infectious Bronchitis Virus Show Differential Binding to Various Chicken Tissues Christina M. Leyson, Brian J. Jordan, and Mark W. Jackwood, Poultry Diagnostic and Research Center, Department of Population Health, College of Veterinary Medicine, University of Georgia, Athens, GA</li> <li>Major Histocompatibility Complex and Genetic Resistance Towards Infectious Bronchitis Virus Rodrigo A. Gallardo, Ying Wang, K. Smith, and H. Zhou, Department of Population Health and Reproduction, School of Veterinary Medicine, University of California, Davis, CA</li> <li>L. Dwight Schwartz Travel Scholarship Winner * Development of Real-Time Quantitative RT-PCR Assays to Detect GA07, GA08 and GA13 Infectious Bronchitis Virus Types Eric M. Shepherd, Brian J. Jordan, Deborah A. Hilt, and Mark W. Jackwood, Poultry Diagnostic and Research Center, Department of Population Health, College</li> </ul>	<ul> <li>Enteritis Virus on RP19 B-Lymphoblastoid Cells H. M. Mahsoub, N. P. Evans, R. J. Avery, L. Yuan, K. Zimmerman, and F. W. Pierson, <i>Department of Population Health Sciences, Virginia-Maryland College of Veterinary Medicine, Virginia Tech, Blacksburg, VA</i></li> <li>Comparative Genomic Analysis of Novel Avipoxvirus Isolates. Deoki N. Tripathy, Gerald F Kutish, Dan L. Rock, Claudio L. Afonso and Diego G. Diel, <i>College of Veterinary Medicine, University of Illinois, Urbana, IL</i></li> <li>Investigating the avian enteric picornaviruses in turkeys and chickens: viral community analyses and potential roles in pathogenesis Michael Day and Laszlo Zsak, <i>United States Department of Agriculture Agricultural Research Service Southeast Poultry Research Laboratory, Athens, GA</i></li> </ul>	



# Tuesday, July 14, 2015



	Room 210 A	Room 210 C
Topic	Diagnostic/ Welfare/ LT	Bacteria
Moderator	Elena Behnke	Sara Steinlage
8:00 AM	The History of Cooperative Extension and the Changing Role of the Extension Poultry Veterinarian Nathaniel L. Tablante, Virginia- Maryland College of Veterinary Medicine, University of Maryland, College Park, MD	<b>A Longitudinal Study of Escherichia coli Virulence Factors in Turkeys</b> Christina Lindsey, Lisa Nolan, Catherine Logue, David Rives, Jennifer Strickland, and H. John Barnes, <i>North Carolina State University College of</i> <i>Veterinary Medicine, Raleigh, NC</i>
8:15 AM	National Poultry Improvement Plan Update Denise L. Brinson, Director, National Poultry Improvement Plan USDA-APHIS-VS, Conyers, GA	Prevalence and characterization of avian pathogenic E. coli strains isolated from US turkey and broiler flocks. Daniel Karunakaran, Evan Hutchison, and Thomas Rehberger, Agro Biosciences, Wauwatosa, WI
8:30 AM	Bottom-line Financial Outcome May Not Be a Sensitive Test for Detecting Effective Management Inputs James T. Barton, Pacific Vet Group, Fayetteville, AR	Understanding Campylobacter jejuni colonization: Role of Transducer Like Proteins (Tlps) Kshipra Chandrashekhar, D. Gangaiah Sunyoung Hwang, Byeonghwa Jeon, Sangryeol Ryu, and G. Rajashekara The Ohio State University, Wooster, OH
8:45 AM	<b>Challenges facing turkey production and health</b> Hafez Mohamed Hafez, Institute of Poultry Diseases, Faculty of Veterinary Medicine, Free University Berlin, Germany	Identification of bacterial species responsible for chicken embryc mortality in three hatcheries in Western Canada Ruwani Karunarathna Morgan Wawryk, Chenfang Yu, Shelly Popowich, Musangu Ngeleka and Susantha Gomis, Department of Veterinary Pathology, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, SK Canada
9:00 AM	<b>Correlation between areas of high poultry population density and those of high disease prevalence using geographic information systems.</b> Louise Dufour-Zavala, <i>Georgia Poultry Laboratory Network, Gainesville, GA</i>	Use of a wire floor model to evaluate the influence of heat stress at varying stages of early life on the incidence of Enterococcal bacterial chondronecrosis with osteomyelitis in commercial broilers Samantha Pohl, Alexis Kiers, Charles Hofacre, R. Wideman Jr., and Stephan Collett Poultry Diagnostic and Research Center, Department of Population Health, University of Georgia, Athens, GA
9:15 AM	Morphometric Documentation of High Prevalence of Left Ventricular Dilated Cardiomyopathy in Clinically Normal and Cyanotic Mature Commercial Roosters Floyd Wilson, Danny Magee, Kelli Jones, Erica Baravik-Munsell, Timothy Cummings, Robert Wills and Lanny Pace, Poultry Research & Diagnostic Laboratory, Mississippi State University, Pearl, MS	<b>Respiratory Disease Associated with Bordetella hinzii Infection in</b> <b>Tom Turkeys</b> Becky Tilley, Ashley Mason, Eric Gonder, and Louise Temple <i>Butterball, LLC, Goldsboro, NC</i>
9:30 AM	A Unique Case of Exudative Dermatitis and Ingluvitis in a Backyard Chicken Geoffrey Lossie, Yuko Sato, and Patricia Wakenell, Purdue University, Animal Disease Diagnostic Laboratory, Lafayette, IN	<b>Towards molecular typification of Avibacterium paragallinarum</b> Luis E. Saravia, David Requena, Francesca Falconi-Agapito, Milagros Zavaleta Vladimir Morales-Erasto, Edgardo Soriano-Vargas, Eliana Icochea, and Manolo Fernández-Díaz, <i>FARVET SAC, Farmacológicos Veterinarios S.A.C.</i> <i>Chincha, Ica, Peru</i>
9:45 AM		
Торіс	Diagnostic/ Welfare/ LT (continued)	Salmonella
Moderator	Armando Mirande	Denise Brinson
10:00 AM	<b>Differentiating causes of soft bone associated leg problems in</b> <b>young chicks with clinical biochemistry.</b> Daniel Venne and Jean- Pierre Vaillancourt, <i>Couvoir Scott Itée, Faculty of Veterinary medecine of</i> <i>the Université de Montréal, St-Lambert de Lauzon, Canada</i>	Salmonella vaccination in commercial poultry: a review Jaime Ruiz, Poultry Technical Services, Phibro Animal Health, South Central US, McKinney, TX
10:15 AM	Risk factors associated with hypocalcemia or hypophosphatemia by datamining of a clinical biochemistry database. Jean-Pierre Vaillancourt and Daniel Venne, Couvoir Scott Itée, Faculté de médecine vétérinaire Université de Montréal, St-Lambert de Lauzon, Canada	Assessment of Killed Salmonella Vaccine Efficacy in Broiler Breeders and Progeny Virginia Baxter, John El Attrache, Alexandra Mendoza Reilley, and Charles Hofacre, Poultry Diagnostic and Research Center Department of Population Health, College of Veterinary Medicine, University of Georgia, Athens, GA
10:30 AM	Validation of a Commercially-based Infectious Bronchitis Virus Enzyme-linked Immunosorbent Assay for Serological Detection of Turkey Coronavirus Antibodies Yuko Sato, Tsang Long Lin, George E Moore, Roman Pogranichniy, Katrina Miller, Donna Schrader, Ramtin Sina, Ashley Ochs, Audrey Verkamp, and Patricia S Wakenell, Department of Comparative Pathobiology and Animal Disease Diagnostic Laboratory, Purdue University, West Lafayette, IN	<b>Protection against Salmonella Infantis in poultry using inactivated</b> <b>vaccines via oral and parenteral administration.</b> Roxana Sanchez- Ingunza, Melissa Madsen, Jean Guard, and John El-Attrache, <i>Ceva</i> <i>Biomune, Lenexa, KS. United States Department of Agriculture, Agricultura</i> <i>Research Service, Athens, GA</i>
10:45 AM	Automated Tracking of the Progression of an Infectious laryngotracheitis (LT) Experiment Using Bird Vocalizations Wayne Daley and Maricarmen García, Aerospace, Transportation and Systems Laboratory, Georgia Tech Research Institute, Atlanta, GA	<b>Evaluation of Salmonella Enteritidis antibodies in serum samples</b> <b>and eggs from vaccinated hens and their growth Inhibition potential</b> <b>in eggs.</b> Ivan Alvarado, George Girgis, Joann Kinyon, Timothy Frana and Alexandra Reilley, <i>Merck Animal Health, Athens, GA</i>
11:00 AM	<b>Twice Bitten, Once Shy: ILT Eradication in Mississippl</b> Mark A. Burleson, <i>Wayne Farms LLC, Decatur, AL</i>	<b>Comparison of Poulvac® ST colonization rates in commercial</b> <b>leghorns inoculated intranasally or via coarse spray on day of hatch</b> Kalen Cookson, Jon Schaeffer, John Dickson, Chuck Hofacre and Greg Mathis, <i>Zoetis, Durham, NC</i>

# Tuesday, July 14, 2015 (continued)

Торіс	Diagnostic/ Welfare/ LT (continued)	Salmonella (continued)
Moderator	Armando Mirande	Denise Brinson
	Room 210 A	Room 210 C
11:15 AM	<b>Evaluation of bivalent Newcastle disease virus (NDV) vectored</b> <b>infectious laryngotracheitis vaccines in broiler chickens in the</b> <b>presence of NDV maternally derived antibody</b> Qingzhong Yu, Stephen Spatz, Zhenyu Zhang, Jinlong Yang, Maricarmen Garcia, and Laszlo Zsak, Southeast Poultry Research Laboratory, Agricultural Research Services, United States Department of Agriculture, Athens, GA	Phenotypic and genotypic evaluation of Salmonella Heidelberg from a vertical sampling in a US poultry integrator. Melissa Madser Roxana Sanchez-Ingunza, Jean Guard, and John El-Attrache, Cev Biomune, Lenexa, KS. United States Department of Agriculture, Agriculture Research Service, Athens, GA
11:30 AM	Healing Paws Philip A. Stayer, William Dillard, Erin G. Riley, and J. David French, Sanderson Farms, Inc., Laurel, MS	Novel Statistical Approaches toward Salmonella Surveillance in Liv and Processed Poultry Maurice Pltesky, UC Davis School of Veterinar Medicine, CA
11:45 AM	<b>AVMA Animal Welfare Committee Activities and How They Relate to</b> <b>the AAAP</b> Michael P. Martin, NCSU, College of Veterinary Medicine Poultry Health Management, Morrisville, NC	Lessions Learned- 2014/Foster Farms/Salmonella Outbreak Bo O'Connor, Foster Farms, Livingston, CA
12:00 PM	Lunch	
Торіс	Antibiotic/ Clostridia	Management/ IBD/ Revirous
Moderator	Kabel Robbins	Jenny Fricke
1:15 PM	<b>Quantifying antimicrobial use in broiler and turkey production</b> Randall Singer and Charles Hofacre, Department of Veterinary and Biomedical Sciences, College of Veterinary Medicine, University of Minnesota, Saint Paul, MN	<b>Biosecure Evolution</b> Philip A. Stayer, Erin G. Riley, and J. David French Sanderson Farms, Inc., Laurel, MS
1:30 PM	Antimicrobial Resistance: What have we learned from the Danish exprience? Hector M. Cervantes, Phibro Animal Health; University of Georgia, Athens, GA	Assessment of Percentage and Distribution of Musculoskeleta Lesions in Dead Broiler Breeders Sara Reichelt, Callie Pierce, Donn Carver, and Michael Martin, Department of Population Health an Pathobiology, North Carolina State University, Raleigh, NC
1:45 PM	<b>Effect of various alternatives and strategies on gut health</b> <b>parameters of antibiotic-free broiler chicken flocks</b> Martine Boulianne, Marie-Lou Gaucher, Julie Arsenault, Eric Parent, Linnea Newman, and Sylvain Quessy, <i>Chair in Poultry Research, Departement of</i> <i>Clinical Sciences, St.Hyacinthe, Quebec, Canada</i>	<b>Carcass Quality Issues Affected by Incubation Conditions</b> Edgar ( Oviedo-Rondón, Albaraa Sarsour, Thays Quadros, Lilliane Borassatti, an Yulieth Daniela Rodriguez, <i>Prestage Department of Poultry Science, Nort</i> <i>Carolina State University, Raleigh, NC</i>
2:00 PM	Effect of various alternatives and strategies on performances of antibiotic-free broiler chicken flocks Martine Boulianne, Marie-Lou Gaucher, Julie Arsenault and Eric Parent, Chair in Poultry Research, Department of Clinical Sciences, Department of Pathology and Microbiology, Faculty of Veterinary Medicine, University of Montreal, St.Hyacinthe, Quebec, Canada	Field Evaluation of Yucca Schidigera on Ammonia Emission an Production Performance of Laying Hens Kristi Scott, Hong Li, <i>IS</i> America, Inc., Newberry, SC
2:15 PM	Reed Rumsey Basic Research Award Winner * Virulence profiles characterization of clinical strains of Clostridium perfringens causing necrotic enteritis in successive broiler chicken flocks raised without antibiotics. Eric Parent, Marie Archambault, Marie-Lou Gaucher and Martine Boulianne, <i>Chair in Poultry Research,</i> <i>Faculty of Veterinary Medicine of the University of Montreal, St.Hyacinthe,</i> <i>Quebec, Canada</i>	Inactivation of infectious bursal disease virus through compost of litter from poultry houses Rocio Crespo, Lyndon M. Badcoe, Andrew Bary, AHFSL-WADDL, Washington State University, Puyallup, WA
2:30 PM	The Ability of Caprylic Acid to Inhibit Clostridium perfringens Colonization in Chickens and Prevent Necrotic Enteritis Thomas G. Martin. Rebecca White, and Joan A. Smyth, Department of Biomedical Sciences, Quinnipiac University, Department of Pathobiology & Veterinary Science, University of Connecticut, Hamden, CT	Efficacy of commercially available broiler vaccines against variar IBDV strain NC171 isolated in the broiler chicken industry i Canada Shanika Kurukulasuriya, Davor Ojkic, Shelly Popowich, Thusha Gunawardana, Kalhari Bandara, Ashish Gupta, Ruwani Karunarathm Bettey Lockerbie, Suresh K Tikoo, Philip Willson and Susantha Gomi Department of Veterinary Pathology, Western College of Veterinary Medicin University of Saskatchewan, Saskatoon, SK, Canada
2:45 PM	<b>Comparison of Aureomycin 100, BMD 50, Stafac 20 in a necrotic en- teritis challenge study</b> Lloyd Keck, Jon L. Schaeffer, Kalen Cookson, John Dickson, and Stephen W. Davis, <i>Zoetis, West Fork, AR</i>	Presence of infectious bursal disease virus in chicken meat and effect of vaccination in decreasing the virus titers Kateri Bertran, Mariana S e Silva, Kira Moresco, and David E. Swayne, Southeast Poultry Research Laboratory, USDA-ARS, Athens, GA
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# Tuesday, July 14, 2015 (continued)

	Room 210 A	Room 210 C
Topic	Antibiotic/ Clostridia (continued)	Management/ IBD/ Revirous (continued)
Moderator	Nathaniel Tablante	Susan Trock
3:15 PM	<b>Pathology and diagnostic considerations for necrotic enteritis in poultry</b> Joan A. Smyth, <i>Department of Pathobiology &amp; Veterinary Science,</i> University of Connecticut, Storrs, CT	Isolation and molecular characterization of a field virulent strain of infectious bursal disease virus in Liaocheng, Shandong Province, China Jinliang Wang, Wentong Zhang,Feng Wei, Guanggang Qu, Yueqiang Xiao, Na Tang, Zhiqiang Shen, and Huaguang Lu The Pennsylvania State University, University Park, PA
3:30 PM	In ovo vaccination with recombinant NetB plus profilin proteins in combination with Montanide IMS adjuvants induced protective immunity against necrotic enteritis in broiler chickens. Juliette Benarous, Seung I. Jang, Sung-Hyen Lee, Kyung Woo Lee, Yeong Ho Hong, Laurent Dupuis, and Hyun S Lillehoj., <i>SEPPIC, Puteaux, France</i>	Lameness and altered biomechanical properties of gastrocnemius tendon in Turkey arthritis reovirus (TARV-infected) turkeys Tamer Sharafeldin, Sunil Mor, Sagar Goyal and Robert Porter, Minnesota Veterinary Diagnostic Laboratory, Department of Veterinary Population Medicine, College of Veterinary Medicine, University of Minnesota, Saint Paul, MN
3:45 PM	<b>Testing of a non-virulent NetB positive strain of C. perfringens as a live vaccine against necrotic enteritis in chickens.</b> Neha Mishra, and Joan A. Smyth, <i>Department of Pathobiology &amp; Veterinary Science, University of Connecticut, Storrs, CT</i>	Antigenic and Genetic Characterization of a Variant Viral Arthritis Turkey Reovirus Isolated in 2014 Milos Markis, John K. Rosenberger and Sandra C. Rosenberger, AviServe LLC. Innovation Way, Newark, DE
4:00 PM	Alpha toxin production, alpha toxin activity, and sialidase activity of C. perfringens isolates that have been characterized for their ability to produce necrotic enteritis in chickens Joan A. Smyth and Alicia Sobczynski, Department of Pathobiology & Veterinary Science, University of Connecticut, Storrs, CT	Full length genotypic characterization of novel group 1 variant reoviruses from clinical cases of tenosynovitis in chickens Vijay Durairaj, Erich Linnemann, Vanessa Gauthiersloan, Alan Icard and Holly S. Sellers, Poultry Diagnostic and Research Center, Department of Population Health, College of Veterinary Medicine, The University of Georgia, Athens, GA
4:15 PM	Association of NetB-negative and Beta2-positive Clostridium perfringens with Focal Duodenal Necrosis in Laying Chickens Monique França, Francisco A. Uzal, M. A. Barrios, Guillermo Zavala, H.L. Shivaprasad, and L. Stabler, <i>University of Georgia, Athens, GA</i>	Molecular characterization of newly isolated strains of chicken and turkey reoviruses Sunil K. Mor, Arun Kulkarni, Robert E. Porter, and Sagar M. Goyal, Minnesota Veterinary Diagnostic Laboratory and Department of Veterinary Population Medicine, University of Minneosta, Saint Paul, MN
4:30 PM	Decreased Tissue Blood Perfusion and Oxygen Saturation as a Proposed Mechanism for the Development of Clostridial Dermatitis in Turkeys Megan Lighty, Tanya LeRoith, Robert D. Evans, Nammalwar Sriranganathan, François Elvinger, and F. William Pierson, Department of Population Health Sciences, Virginia-Maryland Regional College of Veterinary Medicine, Blacksburg, VA	Update of molecular characterization on the Newly emerging PA avian reovirus variants Detected in Broilers, Layers and Turkeys in Pennsylvania in 2012-2015 Huaguang Lu, Yi Tang, Patty Dunn, Eva Wallner-Pendleton, Lin Lin, and Eric Knoll, Animal Diagnostic Laboratory, Department of Veterinary and Biomedical Sciences, The Pennsylvania State University, University Park, PA
4:45 PM	Commercial Turkey Clostridial Dermatitis Vaccination and Interventions Kabel Robbins, Butterball, LLC Arkansas, Ozark, AR	
5:00 PM	Adjourn	

### **AAAP Poster Session**

Room 210 B

#### Antibiotics

Ceftiofur resistance in Escherichia coli and Salmonella, and ciprofloxacin resistance in Campylobacter spp. in broiler chickens in Canada; updates from the Canadian Integrated Program for Antimicrobial Resistance Surveillance. Agnes Agunos, Sheryl Gow, Jane Parmley, Brent Avery, Anne Deckert, Danielle Daignault, Nicol Janecko, Rebecca Irwin, and Richard Reid-Smith, Laboratory for Foodborne Zoonoses, Public Health Agency of Canada, Guelph, ON, Canada

Antimicrobial use monitoring in Canadian broiler flocks – Results from the CIPARS Farm Surveillance Program (2014 update) Agnes Agunos, David Léger, Sheryl Gow, Anne Deckert and Carolee Carson, Laboratory for Foodborne Zoonoses, Public Health Agency of Canada, Guelph, ON, Canada

#### **Avian Influenza**

Molecular and Serological Epidemiology of Avian Influenza Viruses Subtype H6N1 in Taiwan Hui-Wen Chen, Ju-Yi Peng, and Ching-Ho Wang, Department of Veterinary Medicine, National Taiwan University, Taipei, Taiwan

Secure Turkey Supply Plan- Enhancements Achieved Through Public Private Partnerships Justin G. Bergeron, Sasidhar Malladi, David A. Halvorson, Timothy J. Goldsmith, and James Roth, *University of Minnesota, Center for Animal Health and Food Safety, Saint Paul, MN* 

A Preliminary Survey of Hemagglutinating Viruses from Ducks and Water in the Province of Buenos Aires, Argentina. Celina Buscaglia and Francisco Javier Crosetti Buscaglia, Comision de Investigaciones Cientificas de la Provincia de Buenos Aires, Argentina Club de Observadores de Aves "Divisadero" partidos de General Madariaga y Pinamar. Arca de Noé 278, "Panchali", Pinamar 7167, Provincia de Buenos Aires, Argentina Escuela Superior de Ciencias de la Salud-UNICEN, Olavarria, Prov. Bs As, Argentina

**Development of a Broad Spectrum H5N1 Influenza Vaccine for Pandemic Preparedness** Omar Amen, Sai Vemula, and Suresh K. Mittal, *Department of Comparative Pathobiology, College of Veterinary Medicine, Purdue University, West Lafayette, IN* 

Highly pathogenic avian influenza(HPAI) inactivated vaccine with adjuvants consisting of Toll-like receptor(TLR) ligands in commercial duck. Woo-Tack Hong, Seong-Su Yuk, Dong-Hun Lee, Jae-Keun Park, Erdene-Ochir Tseren-Ochir, Jung-Hoon Kwon, Jin-Yong Noh, Sang-Won Lee, Seung-Yong Park, Joong-Bok Lee, In-Soo Choi and Chang-Seon Song, Avian Disease Laboratory, College of Veterinary Medicine, Konkuk University, Seoul, Republic of Korea

Experimental co-infection of SPF chickens with low pathogenicity avian influenza virus subtypes H9N2, H5N2 and H7N9 and infectious bronchitis virus Mar Costa-Hurtado, Diane Smith, Mark W. Jackwood, Erica Spackman, David Suarez, and Mary Pantin-Jackwood, *Exotic and Emerging Avian Viral Diseases Unit, Southeast Poultry Research Laboratory, ARS-USDA, Athens, GA* 

#### **Bacteria**

A NAD-independent Avibacterium paragallinarum isolated from a naturally occurring infectious coryza outbreak in Peru Francesca Falconi-Agapito, Luis E. Saravia, Aldo Flores-Pérez, and Manolo Fernández-Díaz, *FARVET S.A.C., Chincha Alta, Chincha, Ica, Peru* 

Characterization of wing web vaccination takes in chickens in a laboratory setting Kevin Maschek, Tim Cummings, Sue Ann Hubbard, and Erin Riley, Poultry Research and Diagnostic Laboratory, Department of Population Medicine, College of Veterinary Medicine, Mississippi State University, Brandon, MS

**Evaluation of Protection Induced by Riemerella anatipestifer-E. coli O78 Bacterin in White Pekin Ducks** Simone Stoute and Tirath Sandhu, *University of California Davis, California Animal Health and Food Safety Laboratory, Turlock, CA*  Phenotypes and genotypes of Campylobacter strains isolated from domestic ducks before and after slaughter in Korea Hyung-Kwan Jang, Bai Wei, Se-Yeoun Cha, Ran-Hee Yoon, and Jae-Young Oh, Department of Veterinary Infectious Diseases and Avian Diseases, College of Veterinary Medicine & Korea Zoonosis Research Institute, Chonbuk National University, Iksan, Republic of Korea

Molecular mechanisms of fluoroquinolone resistance in Campylobacter strains isolated from domestic ducks in Korea Hyung-Kwan Jang, Bai Wei, Se-Yeoun Cha, Jae-Hee Roh, and Min Kang, Department of Veterinary Infectious Diseases and Avian Diseases, College of Veterinary Medicine & Korea Zoonosis Research Institute, Chonbuk National University, Iksan, Republic of Korea

Antimicrobial activity of buttermilk peptides on poultry pathogens Catherine Jean, Gilles Robitaille, and Martine Boulianne, *Agriculture and Agri-Food Canada and Chair in Poultry Research, Faculty of Veterinary Medicine, University of Montreal, Laval, Canada* 

Virulence gene and phylogroup detection in E. coli strains isolated from replacement pullets with yolk sac infection and laying hens with peritonitis López AE, Morales EMR, Eslava CCA, Navarro HJA, Navarro OA, Hernández CU, Rosario C, Departamento de Medicina y Zootecnia de Aves, FMVZ, UNAM

Phylogeny and serovar relationship of Avibacterium paragallinarum based on HMTp210 gene Luis E. Saravia, Vladimir Morales-Erasto, David Requena, Francesca Falconi-Agapito, Edgardo Soriano-Vargas, Eliana Icochea, and Manolo Fernández-Díaz. FARVET SAC, Farmacológicos Veterinarios S.A.C., Chincha, Ica, Peru

**Extended-Spectrum Beta-Lactam (ESBL) Resistance in Avian Pathogenic Escherichia coli (APEC).** Catherine M. Logue, Yvonne Wannemuehler, Cecilia Rosario-Cortes, Fabiana Horn, Ashraf Hussein, Wanderley Dias da Silveira, Nicolle Lima Barbieri, Renato Pariz Maluta, Esra Buyukcangaz, and Lisa K. Nolan, *Department of Veterinary Microbiology and Preventive Medicine, College of Veterinary Medicine, Iowa State University, Ames, IA* 

Assessing the impact of pH on the recovery of Salmonella spp. in vitro and from environmental poultry samples. Kellie M. Hogan, N. Holcombe, C. Weller, A. Gumm, N. Cox, D. Cosby, and J.Cason K. Richardson, *Anitox Corp., Lawrenceville GA* 

Prevalence and characteristics of Riemerella anatipestifer isolates from ducks in South Korea: Use of polyvalent coagglutination reagents for serotyping Hyung-Kwan Jang, Hye-Suk Seo, Se-Yeoun Cha, Min Kang, and Jae-Young Oh, Department of Veterinary Infectious Diseases and Avian Diseases, College of Veterinary Medicine & Korea Zoonosis Research Institute, Chonbuk National University, Iksan, Republic of Korea

Diagnosis of prevalent viral and bacterial diseases of broiler chickens and associated antimicrobial use; on-farm biosecurity, and; vaccination measures: 2014 CIPARS broiler farm surveillance summary. Agnes Agunos, Sheryl Gow, Anne Deckert, and David Léger, *Laboratory for Foodborne Zoonoses, Public Health Agency of Canada, Guelph, ON* 

Antimicrobial resistance and virulence gene profile among Escherichia coli isolates from retail chicken meat in Vietnam and comparison to resistance profiles from Canada Kathleen Sary, John Morris Fairbrother, Julie Arsenault, and Martine Boulianne, Chair in Poultry Research, Faculté de Médecine Vétérinaire, Université de Montréal, Saint-Hyacinthe, Canada

**Characterization of surface expressed α-enolase of Enterococcus cecorum and its ability to binds with chicken plasminogen** Dona Saumya S. Wijetunge and Subhashinie Kariyawasam, *Department of Veterinary and Biomedical Sciences Pennsylvania State University, University Park, PA* 

**Co-infection of Avibacterium paragallinarum and Ornithobacterium rhinotracheale in chickens.** V. Morales-Erasto, F. Falconi-Agapito, G.A. Luna-Galaz, L. E. Saravia, A. Montalvan-Avalos, E. Soriano-Vargas EA, and M. Fernández-Díaz., *Centro de Investigación y Estudios Avanzados en Salud Animal, Facultad de Medicina Veterinaria y Zootecnia, Universidad Autónoma del Estado de México, Toluca, México* 

#### **Bacteria (continued)**

Reducing the incidence of bacterial chondronecrosis with osteomyelitis in broilers with a dietary combination of Bacillus subtilis C-3102 (Calsporin<sup>®</sup>) direct fed microbial and IMW50<sup>™</sup> yeast cell wall preparation John Schleifer, R. F. Wideman, Jr, A. Al-Rubaye, Y. M. Kwon, and T. Lohrmann, Quality Technology International University of Arkansas, Division of Agriculture University of Arkansas, Division of Biological Sciences, Gillsville, GA

#### **Case Reports**

A Case of Sodium Toxicity in Broiler Chickens Benjamin Schlegel, Poultry Health Services and the Institute for Applied Poultry Technologies, Airdrie, Canada

**Blindness in six young backyard chickens** Roselene Ecco, Matheus V. L. Moreira, Juliana F. V. Braga, and Ingeborg M. Langohr, *Pathology Laboratory, School of Veterinary Medicine, Universidade Federal de Minas Gerais, Belo Horizonte, MG, Brazil* 

#### **Chicken Infectious Anemia Virus**

Assessment of the Serological Response to Live Attenuated Chicken Infectious Anemia Vaccines Alone or in Combination with Fowl Pox and Avian Encephalomyelitis Vaccines Fernando Lozano, M. Lechuga, John El-Attrache, M. Paniago, Christophe Cazaban, Yannick Gardin, and B. Alva, *Ceva Animal Health, Bordeaux, France* 

#### Clostridia

Characterization and phylogenetic differences of Clostridium perfringens, C. septicum isolates from cases of cellulitis in turkeys Kakambi V. Nagaraja and Anil Thachil, College of Veterinary Medicine University of Minnesota Saint Paul, MN

#### Coccidiosis

Natustat and Bio-Mos for the reduction of Necrotic Enteritis and Salmonella Shedding in Coccidiosis Vaccinated Broiler Chickens Greg F. Mathis, Charles Hofacre, B. Lumpkins, and A. Connely, Southern Poultry Research, Inc., Athens, GA

Broiler Production Results Comparison After a Broiler Coccidia Vaccine Containing Eimeria preacox Beatriz Cardoso, Poultry Health Department, College of Veterinary Medicine, University Federal Fluminense, Hipra Laboratories, Sao Paulo, Brazil

**Evaluation of Coccivac-B and Original XPC on broiler performance** Don McIntyre, Phil Stayer, Erin Riley and David French, *Diamond V, Cedar Rapids, IA* 

Anticcoccidial Effects of Magni-Phi, a Triterpenoid Saponin, When Combined with Salinomycin or Used to Support the Effectiveness of a Coccidiosis Vaccine Kenneth Bafundo, Greg Mathis and B. Lumpkins, Phibro Animal Health Corporation and Southern Poultry Research, Inc., Teaneck, NJ

The impact of electrolyte balance on the performance of broilers fed diets with two different levels of lasalocid Marco Quiroz, Taylor Barbosa, and John Dickson, *Zoetis Inc., Durham, NC* 

**Expression of digestive enzymes, nutrient transporters and an antimicrobial peptide in the intestine of Eimeria challenged broilers** Eric A. Wong, Shengchen Su, Katarzyna B. Miska, Raymond H. Fetterer, and Mark C. Jenkins, *Department of Animal and Poultry Sciences, Virginia Tech, Blacksburg, VA* 

**Mucosal delivery of self-destructing Salmonella-based vaccine against coccidiosis** Wei Kong and Roy Curtiss III, Center for Infectious Diseases and Vaccinology, The Biodesign Institute, Arizona State University, Tempe, AZ

#### Diagnostics

Efficient Tissue Processing Procedures for Various Tissue Specimens in Avian Virology Diagnostics Huaguang Lu, Eric Knoll, Lin Lin, and Yi Tang, The Pennsylvania State University, University Park, PA Development of infectious bronchitis virus (IBV) ELISA kit for detection of antibodies against nephropathogenic IBV vaccine Gyeong-Bin Gwon, Soo-Won Choi, Woo-Tack Hong, Dong-Hun Lee, Jae-Keun Park, Seong-Su Yuk, Jung-Hoon Kwon, Jin-Yong Noh, Hana Youn, Hyo-Sun Ju, Kyong-Min Kim, Jong-Su Ha, Jeom-Joo Kim, Ji-Yun Bahng, Young-Ho Son, Myoung-Jin Cha, Joong-Bok Lee, Seung-Yong Park, In-Soo Choi, and Chang-Seon Song, Avian Disease Laboratory, College of Veterinary Medicine, Konkuk University, Gwangjin-gu, Seoul, Republic of Korea

Experiences Performing ELISA Assays using Liquid Handling Systems -Robotics Brenda Glidewell, Georgia Poultry Laboratory Network, Gainesville, GA

Serological survey on the prevalence of Newcastle disease virus, Avian influenza virus and Chicken infectious anemia virus in backyard chickens in Grenada, West Indies Keshaw P. Tiwari, Alfred Chikweto, Muhammad I. Bhaiyat, Julia Coughlin, Alma Bréjeon, Salomé Bruyant and Ravindra N. Sharma, Department of Pathobiology, School of Veterinary Medicine, St Georges University, Grenada, West Indies, Grenada

Histopathologic Examination of Cooked Chicken Muscle Frederic J. Hoerr and Jonathan P. McKoy, Veterinary Diagnostic Pathology, LLC Pilgrim's Pride Corporation, Auburn, AL

Histologic Lesions Found in the Reproductive Tract from Cases Submitted to PDRC Susan Williams, Poultry Diagnostic and Research Center, Department of Population Health, College of Veterinary Medicine, University of Georgia, Athens, GA

Isolation of Avian Birnavirus, Fowl Adenovirus, Reovirus and Rotavirus in LMH Cell Cultures Huaguang Lu, Lin Lin, Yi Tang, Eric Knoll, and Greg Ning, *The Pennsylvania State University, University Park, PA* 

#### **Enteric Diseases**

**Enteritis in chickens associated to avian parvovirus.** Luis F. N. Núñez, Silvana H. Santander-Parra, Lilian R. M. Sá, Claudia C. Carranza, Claudete S. Astolfi-Ferreira, and Antonio J. P. Ferreira., *Avian Pathology Laboratory, Department of Pathology, School of Veterinary Medicine, University of São Paulo, SP, Brazil* 

Chicken Astrovirus associated to "white chicks" in Brazilian poultry flocks. Luis F. N. Núñez, Silvana H. Santander-Parra, Claudia C. Carranza, Claudete S. Astolfi-Ferreira, and Antonio J. P. Ferreira., Avian Pathology Laboratory, Department of Pathology, School of Veterinary Medicine, University of São Paulo, SP, Brazil

Effect of Original XPC in broilers challenged with Clostridium perfringens Eric Gingerich, Charles Hofacre and Greg Mathis, Diamond V, Cedar Rapids, IA

**Development of a non invasion real-time PCR assay for the quantitation of chicken parvovirus in fecal swabs** Stephen Spatz, Laszlo Zsak, Teresa Ross and Fenglan Li, Southeast Poultry Research Laboratory, Agricultural Research Service, United States Department of Agriculture, Athens, GA

#### **Gut Health**

**The Role of Gut Health in the Skeletal Development of Pekin Ducks** Jocelyn Romano, *Alltech Poultry Technical Services Raleigh, NC* 

Increased Concerns for the Lack of Therapeutic Interventions against Histomoniasis (Blackhead Disease) in Turkeys Prajwal R. Regmi, Ashley Shaw, Ruby Hsieh, Janis Messenheimer, Jeffrey M. Gilbert, Laura Hungerford, and Padmakumar Pillai, Office of New Animal Drug Evaluation and Office of Surveillance and Compliance, Center for Veterinary Medicine, U.S. Food and Drug Administration, Rockville, MD

The development of the gut microbiota and its relationship with the health and growth performance of broilers Yeonji Bae, Keong-Cheol Min, Jong-Suk Mo, Eun-Ok Jeon, Bon-Sang Koo, Jong-Nyeo Kim, and Inpil Mo, Avian Disease Laboratory, College of Veterinary Medicine, Chungbuk National University, Cheongju, Republic of Korea

A cell screen assay and turkey challenge to test different metals and other chemical compounds as alternative treatment strategies for Blackhead disease Miguel A. Barrios, Robert B. Beckstead, *Poultry Science Department, The University of Georgia, Athens, GA* 

Cloning Of Duck Toll like Receptors From 1 To 21 As an Anseriformes Model and Its Polymorphism With Galliformes and Passeriformes models Wael Elfeil, Han wenyu, and Reham Abouelamaatti, *Poultry and Rabbit Department*, Faculty of Veterinary Medicine, Suez Canal University, Ismailia, Egypt

Differential responses of primary leukocytes from turkey pedigree lines to Salmonella Heidelberg Rami Dalloul, Tiffany Potter, Paige Glover, and Nick Evans, Avian Immunobiology Laboratory, Animal & Poultry Sciences, Virginia Tech, Blacksburg, VA

Innate immunity markers in the chicken respiratory tissues after intranasal administration of Lactobacillus casei Eunice Ndegwa, Anissa Buckner and Jasmon Montgomery, University of Arkansas Pine Bluff, AR

**Research of a LPS vaccine against Salmonellosis in chickens** Ryuichi Sakamoto, E. Yokoyama, T. Nagata, M. Sakaguchi, K. Deguchi, K. Yamazaki, and T. Honda, *Kaketsuken (The Chemo-Sero-Therapeutic Research Institute), Kumamoto, Japan* 

#### **Infectious Bronchitis Virus**

Consequences Of Modifying Live Infectious Bronchitis Virus Vaccination Programs In Broilers – The 2013-2014 Delmarva Experience. Brian S. Ladman, Jack Gelb, Jr., Daniel A. Bautista, and Miguel J. Ruano, Avian Biosciences Center, University of Delaware, Newark, DE

Protection conferred by Massachusetts strain of Infectious Bronchitis Virus against Brazilian BR-I field virus Jorge Chacón, Pilar Vejarano, Bianca Bianch, Antonio Piantino Ferreira, Zoltan Nagy, and Zoltan Penzes, *Ceva Animal Health, Campinas, Brazil* 

**Mucolytic efficacy of herbal extract on chicken infected with respiratory virus** Ha-Na Youn, Hyo-Sun Ju, Kyong-Min Kim, Jae-Keun Park, Su-Won Choi, Woo-tack Hong, Seong-Su Yuk, Erdene-Ochir Tseren-Ochir, Jung-Hoon Kwon, Jin-Yong Noh, Joong-Bok Lee, Seung-Young Park, In-Soo Choi and Chang-Seon Song, *Avian Disease Laboratory, College of Veterinary Medicine, Konkuk University, Seoul, Republic of Korea* 

**IBV 4/91 Infection in Ontario's Broiler Breeder Flocks: Clinical Signs, Pathologic lesions and test methods** Emily Martin, Marina Brash, Margaret Stalker, Sarah Hoyland, Jane Coventry, Christian Sandrock, and Davor Ojkic, *Animal Health Laboratory, University of Guelph, Guelph, Ontario, Canada* 

Production of structural proteins of Avian Infectious Bronchitis virus by utilizing a novel yeast expression vector Jong-Suk Mo, Jeong-Nyeo Kim, Eun-Ok Jeon, Bon-Sang Koo, Yeon-ji Bae, and In-Pil Mo, Avian Disease Laboratory College of Veterinary Medicine, Chung-Buk National University, Cheonju, Republic of Korea

Avian Infectious Bronchitis Virus (IBV): Differential pathological and immunological profiles of two Brazilian variants. Cintia Hiromi Okino, Marcos Antônio Zanella Mores, Iara Maria Trevisol, Liana Brentano, Gláucio Luís Mata Mattos, and Hélio José Montassier, *Embrapa Swine and Poultry - Concordia - SC - Brazil IMUNOVIR - Departamento de Patologia Animal - UNESP - Jaboticabal, SP, Brazil* 

#### **Infectious Bursal Disease**

**Molecular Evidence of the Continued Evolution of Infectious Bursal Disease Viruses.** Daral J. Jackwood and Linda O. Michel, *Food Animal Health Research Program, Ohio Agricultural Research and Development Center, The Ohio State University, Wooster, OH* 

Splenic gene expression profiling of chickens protected against infectious bursal disease by DNA vaccination Ching Ching Wu, Chun-Yu Tung, and Tsang Long Lin, Department of Comparative Pathobiology, Purdue University, West Lafayette, IN

Development of differential real-time RT-PCR method for the assessment of field and vaccine IBD virus replication in vaccinated chickens Vilmos Palya, Tamas Mato, Timea Tatar-Kis, Edit Walkone-Kovacs, Zalan G. Homonnay, and Yannick Gardin, Scientific Support and Investigation Unit, Ceva Phylaxia, Ceva Animal Health, Budapest, Hungary

#### Laryngotracheitis

Comparison of infectious laryngotracheitis virus (ILTV) genomes from commercial poultry and backyard flock isolates Maricarmen García, Sylva M. Riblet, Jeremy Volkening and Steve Spatz, Poultry Diagnostic Research Center, Dept. of Population Health, College of Vet. Med. University of Georgia, Athens GA

Is it possible to consistently achieve optimal drinking water vaccination results with infectious layrngotracheitis virus chicken embryo origin vaccine? Jack Gelb, Jr., Brian S. Ladman and Miguel J. Ruano, Avian Biosciences Center University of Delaware, Newark, DE

**Replication of infectious laryngotracheitis virus (ILTV) chicken embryo origin (CEO) vaccine after different mucosal inoculation routes** Gabriela Beltran Garza, Guillermo Zavala, Susan Williams and Maricarmen García, *The University of Georgia, Avian Health International, LLC* 

**Potential of an ORF-C gene deleted strain of infectious laryngotracheitis virus (ILTV) strain as a live attenuated vaccine** Gustavo Henrique Schneiders; Sylva M. Riblet; Maricarmen Garcia, *Poultry Diagnostic and Research Center, Department of Population Health, College of Veterinary Medicine, University of Georgia, Athens, GA* 

#### Marek's Disease

Marek's Disease in Pet/Hobby Chickens Oscar J. Fletcher, Tahseen Abdul-Aziz, James Davis, Doug Anderson, and Isabel Gimeno, *College of Veterinary Medicine*, *NC State University, Raleigh, NC* 

Establishment of chicken embryo fibroblast cell culture system to evaluate the efficacy of cryoprotectants in Marek's disease vaccine Ho-Yuan Chou, Li-Fang Liu, Chi-Fan Wu, Zeng-Weng Chen, Jyh-Perng Wang, and Jiunn-Horng Lin, Division of Animal Medicine, Animal Technology Laboratories, Agricultural Technology Research Institute, Taiwan, ROC

**Characterization of Alabama Red Leg lesions induced by Marek's disease Virus** Brandon T. Armwood, Aneg L. Cortes, Arun K. R. Pandiri, and Isabel M. Gimeno, *North Carolina State University, College of Veterinary Medicine, Population Health and Pathobiology, Raleigh, NC* 

Effect of Marek's disease vaccines on the ontogeny of the interferon system in chickens Ayanna Glaize, Aneg L. Cortes, Arun R. Pandiri, and Isabel M. Gimeno, North Carolina State University, Raleigh, NC

**Evaluation of factors that influence dose variability of Marek's disease vaccines** Blanca Lopez de Juan Abad, Aneg Lucia Cortes, and Isabel M. Gimeno, *North Carolina State University, Raleigh, NC* 

#### Mycoplasma

**Diverse Wild Bird Host Range of Mycoplasma gallisepticum and Epidemiologic Implications** David H. Ley, Jonathan C. DeCoste, Wesley M. Hochachka, and André A. Dhondt, *Department of Population Health and Pathobiology, College of Veterinary Medicine, NC State University, Raleigh, NC* 

**Optimal Sample Processing for Diagnostic Avian Mycoplasma Real-time PCR** Rachel L. Jude, Patrick Black and Naola Ferguson-Noel, *Poultry Diagnostic and Research Center, Department of Population Health, University of Georgia, 953 College Station Road, Athens GA* 

Lymphocytic Pneumonia Associated with a Mycoplasma Synoviae Infection in Broiler Chickens James F. Davis, Naola Ferguson-Noel, and Oscar J. Fletcher, *Georgia Poultry Laboratory Network, Oakwood, GA* 

#### Newcastle Disease Virus

Monitoring recombinant HVT-ND vaccine-take using organ samples collected on FTA card Vilmos Palya, Edit Walkone-Kovacs, Zalan G. Homonnay, Istvan Kiss, Tamas Mato, Yannick Gardin, *Scientific Support and Investigation Unit, Ceva Phylaxia, Ceva Animal Health, Wooster, OH* 

**Dissecting respiratory co-infections in poultry using a nanofluidic PCR screening assay: field investigations** Jean-Luc Guérin, Guillaume Croville, Alexis Senet, Charlotte Foret, Mattias Delpont, and Mariette Ducatez, *Université de Toulouse, INP, ENVT and INRA, Toulouse, France* 

Serological Response to Live + killed Newcastle Disease vaccination in commercial broilers. Francisco Perozo, Rosmar Marcano, Pablo Sanchez, Francisco Rojo Hector Garcia and Rafael Fernández., University of Zulia Veterinary College. Maracaibo, Zulia, Venezuela

Hatchery screening for Newcastle disease virus using real-time PCR (qPCR) Pérez Dayana, Castilletti José, Navas Yolimar, and Yanes Viamney, Protinal-Proagro C.A, Valencia, Venezuela

Venezuelan Genotype VII Velogenic Newcastle disease virus: Immunosuppressive effects Rosmar Marcano, Francisco Perozo and Rafael Fernandez, Universidad Central de Venezuela, Universidad del Zulia and Merial Select, Maracay, Venezuela

#### Other

A Biography of Roland W. Winterfield Frederic J. Hoerr, Veterinary Diagnostic Pathology, LLC, Aurburn, AL

#### Pox

**Elisa values and the presence of "takes" in fowlpox vaccination** Celina Buscaglia, Comisión de Investigaciones Científicas de la Provincia de Buenos Aires (CIC). Catedra de Zootecnia Esecial III (Aves y Piliferos) Facultad de Ciencias Veterinarias, Universidad nacional de la Plata, Argentina. Catedra de Patología de Aves y Pilíferos. Facultad de Ciencias Veterinarias, Universidad Nacional de la Plata, Argentina

#### Reovirus

**Prevalence and genotypic analysis of avian reovirus variants from clinical cases of tenosynovitis** Holly S. Sellers, Erich G. Linnemann, William Dawe and Vanessa Gauthiersloan, *Poultry Diagnostic and Research Center College of Veterinary Medicine University of Georgia, Athens, GA* 

A complete genomic characterization of a PA broiler reovirus field strain Yi Tang, Huaguang Lu, Patty Dunn, Eva Wallner-Pendleton, Lin Lin, Eric Knoll, *The Pennsylvania State University, University Park, PA* 

The genomic constellation of the S gene segments from recent reovirus isolates associated with tenosynovitis and runting-stunting cases in Georgia. Arun B. Kulkarni, *Georgia Poultry Laboratory Network, Gainesville, GA* 

#### Salmonella

Salmonella Enteriditis Displays Enhanced Virulence and Colonization in Mice following Growth in Egg Yolk Matthew R. Moreau, Megan L. Bailey, Sudharsan R. Gongati, Dona Saumya S. Wijetunge, Eranda M.K. Kurundu Hewage, Bhushan Jayarao and Subhashinie Kariyawasam, *Department of Veterinary and Biomedical Sciences, Pennsylvania State University, University Park, PA* 

Phenotypic and Genotypic Characteristics of Salmonella Enteritidis Isolated from Shell Eggs Subhashinie Kariyawasam, Dona Saumya Wijetunge, Thomas Denagamage, Eva Wallner-Pendleton, Ellen King, and Bhushan Jayarao, Department of Veterinary and Biomedical Sciences, Pennsylvania State University, Port Matilda, PA

Complete Sequencing and Pan-Genome Analysis of Two Distinct Strains of Salmonella Enteriditis Isolated from Shell Eggs Show Equal Virulence Potential Matthew R. Moreau, Yury V. Ivanov, Bhushan Jayarao and Subhashinie Kariyawasam, Department of Veterinary and Biomedical Sciences, Pennsylvania State University, University Park, PA Longitudinal Survey of Small Layer Farms in the Midwest and Northeast United States for Salmonella Enteritidis Thomas Denagamage, Paul Patterson, Eva Wallner-Pendleton, Darrell Trampel, Bhushan Jayarao, Nikki Shariat, Ed Dudley, and Subhashinie Kariyawasam, *Pennsylvania State University, Port Matilda, PA* 

Antimicrobial Resistance in Salmonella Isolates of Poultry Origin- A Historical Perspective Kevin W. Smith, Georgia Poultry Laboratory Network, Gainesville, GA

**Comparison of Two Commercial Live Salmonella Vaccines in Turkeys** Brian Wooming, Marion Morgan and Neil Pumford, *Cargill Turkey Production*, *Springdale*, *AR* 

A Closer Look at Atypical Salmonella in Poultry Samples Selena York, Georgia Poultry Laboratory, Gainesville, GA

A Polyvalent Salmonella vaccine with a novel Dual Adjuvant (Immuvant Duo®) for protection against Salmonella enterica Serotypes in Chickens Roger Ruehling, Kristi Moore Dorsey, Brianna Ford, James Mills, Bereket Zekarias, *Ceva Biomune, Lenexa, KS* 

#### Virology

**Genetic relationship of turkey coronavirus isolates in the U.S.** Tsang Long Lin, Yi-Ning Chen, Chien-Chang Loa, Mustafa Ababneh, Tom Bryan, and Ching Ching Wu, *Department of Comparative Pathobiology, Purdue University, West Lafayette, IN* 

**Case report of co-infection of serotypes of Fowl adenovirus in the Central East of Peru** Zavaleta Milagros, Perinango Carla, Saravia Luis E., Icochea Eliana, and Fernández-Díaz Manolo., *FARVET S.A.C* 

Complete Genomic Sequence of the First Korean Chicken Adapted Egg Drop Syndrome Virus from Pekin Ducks Se-Yeoun Cha, Min Kang, Ran-Hee Yoon, Hyung-Kwan Jang, Department of Veterinary Infectious Diseases and Avian Diseases, College of Veterinary Medicine & Korea Zoonosis Research Institute, Chonbuk National University, Iksan, Republic of Korea



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