

Sunday, July 31

SYMPOSIA AND ORAL SESSIONS

Ancillary Scientists Symposium Conservation of Avian Genetic Resources: Current Opportunities and Challenges Chair: M. Qureshi, USDA/CSREES Auditorium		
8:00 AM		Welcome and opening remarks. M. Qureshi*, <i>USDA/CSREES, Washington, D.C.</i>
8:15 AM	1	Historical and contemporary issues related to genetic conservation. J. Hodges*, <i>Compuserve, Mittersill, Austria.</i>
9:00 AM		National animal germplasm program: opportunities and challenges. H. Blackburn*, <i>USDA/ARS, Fort Collins, Colorado.</i>
9:30 AM	2	Netherlands approach in animal genetic resource conservation: Poultry perspective. H. Woelders* ^{1,2} , C. Zuidberg ¹ , and S. Hiemstra ¹ , ¹ <i>Centre for Genetic Resources, Lelystad, The Netherlands</i> , ² <i>Wageningen University and Research Centre, Lelystad, The Netherlands.</i>
10:00 AM		Break.
10:15 AM	3	Avian genetic stocks: The high and the low points from an academia researcher. M.E. Delany*, <i>University of California, Davis.</i>
10:45 AM		Avian genetic stocks: The high and low points from an industry researcher. J. Fulton*, <i>Hy-Line International, Dallas Center, Iowa.</i>
11:15 AM		Panel discussion. G. Barbato*, <i>Pennsylvania State University, University Park.</i>
11:45 AM		Lunch.
1:00 PM		Avian Semen Cryopreservation: What are the Biological Challenges? J. Long*, <i>USDA/ARS, Beltsville, Maryland.</i>
1:30 PM		Avian germplasm preservation: Stem cells or PGC's? J. Petite*, <i>North Carolina State University, Raleigh.</i>
2:00 PM		A cryobiologist's viewpoint of genetic conservation. S. Leibo*, <i>University of New Orleans, New Orleans, Louisiana.</i>
2:30 PM		Break.
2:45 PM	4	Why do we need to conserve what we have? A post-genome sequencing perspective on existing chicken strains. M. Miller*, <i>Beckman Research Institute of the City of Hope National Medical Center, Duarte, California.</i>

3:15 PM	5	Use of genetic strains of chickens in studies of ovarian cancer. P. Johnson*, <i>Cornell University, Ithaca, New York.</i>
3:45 PM		Endangered species preservation: From coral to pandas. M. Hagedorn*, <i>Smithsonian National Zoological Park, Washington, D.C.</i>
4:15 PM		What can be learnt from Jackson lab model? R. Taft*, <i>The Jackson Laboratory, Bar Harbor, Maine.</i>
4:45 PM		Next steps: panel discussion. P. Siegel*, <i>Virginia Polytechnic Institute and State University, Blacksburg.</i>

Extension		
National Poultry Extension Workshop		
Chair: C. Novak, Virginia Tech		
Ballroom A, Left		
8:00 AM		Welcome & introductions. D. Connor*, <i>Auburn University, Auburn, Alabama.</i>
8:05 AM		Washington update. R. Reynnells*, <i>USDA, CSREES, Washington, D.C.</i>
8:20 AM		Non-traditional funding. T. Cross*, <i>University of Tennessee, Knoxville.</i>
8:50 AM		Case study- Virginia/Louisiana. C. Novak* ¹ , and T.Lavergna ² , <i>¹Virginia Tech, Blacksburg, ²Louisiana State University, Baton Rouge.</i>
9:05 AM		Methionine in organic poultry diets. B. Buresh*, <i>Tyson Foods, Inc., Springdale, Arkansas.</i>
9:30 AM		Microbial safety of chickens raised without antibiotics. J. Griggs*, <i>University of Minnesota, St. Paul.</i>
9:50 AM		Break.
10:10 AM		National ID program for poultry-possible methods. J. Weimers*, <i>USDA/APHIS, Washington, D.C.</i>
10:30 AM		Case study-trouble shooting processing plants. S. Russell*, <i>University of Georgia, Athens.</i>
10:50 AM		Laying hen molting programs. K. Koelkebeck*, <i>University of Illinois, Urbana.</i>
11:15 AM		Future of feeding ruminant by-products to poultry. G. Pearl*, <i>Fats & Proteins Research Foundation, Inc., Bloomington, Illinois.</i>
11:40 AM		Animal welfare audits. B. Webster*, <i>University of Georgia, Athens.</i>
12:00 PM		Lunch.
1:00 PM		Development of 1st response team. B. Norton*, <i>Auburn University, Auburn, Alabama.</i>

1:25 PM	FBI perspective. J. Ronsisvalle*, <i>FBI, Alabama.</i>
1:50 PM	Homeland security: Where do our products go? B. Smith*, <i>USDA/CREES, Washington, D.C.</i>
2:15 PM	Eden Network: When will a system be in place? V. Morgan*, <i>Auburn University, Auburn, Alabama.</i>
2:45 PM	Break.
3:00 PM	Ammonia quantification. P. Patterson*, <i>Penn State University, University Park.</i>
3:30 PM	Litter types and P solubility. A. Tasistro*, <i>University of Georgia, Athens.</i>

SYMPOSIA AND ORAL SESSIONS

Informal Nutrition Symposium Dynamics of the Digestive System Chair: M. Sifri, ADM Animal Health & Nutrition Ballroom A, Right	
1:00 PM	The advisor and the mentor. M. Sifri*, <i>ADM Animal Health & Nutrition, Quincy, Illinois.</i>
1:15 PM	Overview of the immune dynamics of the digestive system. D.R. Korver*, <i>University of Alberta, Edmonton, AB, Canada.</i>
1:55 PM	Digestive physiology and the role of microorganisms. G. Tellez*, <i>University of Arkansas, Fayetteville.</i>
2:25 PM	Emerging technologies in microbial ecology: Challenges of Cocci and Necrotic Enteritis to the health of the digestive system. C.L. Hofacre*, <i>University of Georgia, Athens.</i>
2:55 PM	Break.
3:05 PM	Anatomy, microbes and fiber: Small versus large intestine. E.T. Moran*, Jr., <i>Auburn University, Auburn, Alabama.</i>
3:40 PM	Nutritional and microbial interactions in the digestive system: Current knowledge and future directions. E. Koutsos*, <i>California Polytechnic State University, San Luis Obispo.</i>
4:25 PM	Discussions, conclusions, messages and recommendations. W. Guenter*, and D.F. Calabotta, <i>University of Manitoba, Winnipeg, MB, Canada.</i>
5:00 PM	Adjourn and help a human being help another. M. Sifri*, <i>ADM Animal Health & Nutrition, Quincy, Illinois.</i>



Opening Session of the 94th PSA Annual Meeting Auditorium	
6:00 PM	Where will we be if we are too chicken to change? J.W. Jensen*, <i>Special Assistant to the President of Agriculture, Auburn University, Auburn, Alabama.</i>
6:20 PM	Strategic planning: The next five years. P.S. Hester*, <i>President of PSA, Purdue University, West Lafayette, Indiana.</i>
6:50 PM	Announcements and Instructions. J.L. Wilson*, <i>2005 Program Chair, University of Georgia.</i>

SYMPOSIA AND ORAL SESSIONS

Processing and Products Processing and Meat Quality Chair: R.J. Buhr, USDA-ARS RRC Ballroom A, Left		
7:45 AM	6	Speciation of <i>Campylobacter</i> recovered at select points along the processing line during commercial turkey processing. S. Stevens* ¹ , J.A. Byrd ² , A.D. McElroy ³ , S. Anderson ¹ , D.J. Nisbet ² , D.J. Caldwell ¹ , and M.E. Hume ² , ¹ <i>Texas A&M University, College Station</i> , ² <i>USDA-ARS Southern Plains Agricultural Research Center, College Station, Texas</i> , ³ <i>Virginia Tech, Blacksburg.</i>
8:00 AM	7	Release of <i>E. coli</i> from feathered and featherless broiler carcasses immersed in warm water. J.A. Cason*, R.J. Buhr, and A. Hinton, Jr., <i>USDA-ARS Russell Research Center, Athens, Georgia.</i>
8:15 AM	8	Poststun decapitation does not alter the number of bacteria recovered from broiler respiratory tracts following bleeding or immersion scalding. R.J. Buhr* ¹ , M.E. Berrang ¹ , D.V. Bourassa ^{1,2} , and J.A. Cason ¹ , ¹ <i>USDA-ARS Russell Research Center, Athens, Georgia</i> , ² <i>The University of Georgia, Athens.</i>
8:30 AM	9	Numbers and incidence of total aerobes, coliforms, <i>Escherichia coli</i>, and <i>Campylobacter</i> in contents from the crop and gizzard of broiler chickens. D.P. Smith* and M.E. Berrang, <i>USDA-ARS Russell Research Center, Athens, Georgia.</i>
8:45 AM	10	Relative resistance of bacteria associated with poultry processing to the antibacterial activity of electrolyzed water. A. Hinton Jr.* ¹ , V.K. Burkeen ² , and Y. Hung ² , ¹ <i>USDA-ARS Russell Research Center, Athens, Georgia</i> , ² <i>University of Georgia, Athens.</i>
9:00 AM	11	Impact of post-chill dip application of acidified sodium chlorite on the shelf life of commercial broiler carcasses. O.A. Oyarzabal* ¹ , D.E. Conner ¹ , C.C. Warf ² , and G.K. Kemp ² , ¹ <i>Auburn University, Auburn, Alabama</i> , ² <i>Ecolab, Redmond, Washington.</i>
9:15 AM	12	Effect of lighting intensity and duration on breast fillet dimensions and meat quality. N.A. McKee*, R.J. Lien, J.B. Hess, S.F. Bilgili, and S.R. McKee, <i>Auburn University, Auburn, Alabama.</i>
9:30 AM	13	Effect of chronic heat stress on meat quality parameters of two commercial broiler lines.

		A. Saha* ¹ , T.L. Wing ² , and C.M. Owens ¹ , ¹ <i>University of Arkansas, Fayetteville</i> , ² <i>Cobb-Vantress, Inc., Siloam Springs, Arkansas</i> .
9:45 AM	14	Supplementing peanut skins in poultry diets to alleviate meat quality defects associated with heat stress. L.J. Bauermeister* ¹ , C.Z. Alvarado ² , and S.R. McKee ¹ , ¹ <i>Auburn University, Auburn, Alabama</i> , ² <i>Texas Tech University, Lubbock</i> .
10:00 AM		Break.
10:15 AM	15	Impact of alternative broiler genotype and production system on meat quality. A.C. Fanatico*, P.B. Pillai, J.L. Emmert, and C.M. Owens, <i>University of Arkansas, Fayetteville</i> .
10:30 AM	16	A comparison of carcass characteristics and fillet uniformity among four commercial broiler crosses marketed at 6 and 8 weeks of age. N.S. Joseph*, J. Lee, E.T. Moran, Jr., and J. Galobart Cots, <i>Auburn University, Auburn, Alabama</i> .
10:45 AM	17	Marination of turkey breast fillets with organic acids to control the growth of <i>Listeria monocytogenes</i> and improve meat quality. C.D. Carroll*, C.Z. Alvarado, M.M. Brashears, and L.D. Thompson, <i>Texas Tech University, Lubbock</i> .
11:00 AM	18	Performance evaluation of a model to predict growth of <i>Clostridium perfringens</i> in cured and uncured injected turkey during exponential cooling. M.X. Sanchez-Plata* ^{1,2} , A. Amezcuita ² , and H. Thippareddi ² , ¹ <i>Texas A&M University, College Station</i> , ² <i>University of Nebraska, Lincoln</i> .
11:15 AM	19	Bone strength of clavicles from four commercial high yielding broiler strains. J.M. Mehaffey*, A. Saha, J.F. Meullenet, and C.M. Owens, <i>University of Arkansas, Fayetteville</i> .
11:30 AM	20	Effect of nisin carry over into the plating medium on <i>Listeria monocytogenes</i> enumeration and efficacy of chymotrypsin for inactivation of nisin on ready to eat meat surfaces. S. Mangalassary*, I.Y. Han, and P.L. Dawson, <i>Clemson University, Clemson, South Carolina</i> .
11:45 AM	21	Organization of a NAFSS-ARS cooperative research project to quantify <i>Listeria monocytogenes</i> in ready-to-eat meats and poultry products. O.A. Oyarzabal* ¹ , A. Draughon ² , E.T. Ryser ³ , D. Cliver ⁴ , M. Hajmeer ⁴ , P. Panglioli ² , and R. Roy ¹ , ¹ <i>Auburn University, Auburn, Alabama</i> , ² <i>University of Tennessee, Knoxville</i> , ³ <i>Michigan State University, East Lansing</i> , ⁴ <i>University of California, Davis</i> .

Environment and Management Broiler Breeders		
Chair: R.K. Bramwell, University of Arkansas		
Auditorium		
8:00 AM	22	Phosphorus nutrition in broiler breeder pullets and hens. M.S. Lilburn* ¹ , A. Mitchell ² , and E.E.M. Pierson ³ , ¹ <i>Ohio State University, Wooster</i> , ² <i>Growth Biology Lab, USDA, Beltsville, Maryland</i> , ³ <i>Danisco Animal Nutrition, St. Louis, Missouri</i> .
8:15 AM	23	Male-male competition for matings in broiler breeders. I. Estevez*, B. Bilcik, and M.R. Luque, <i>University of Maryland, College Park</i> .
8:30 AM	24	Effects of ad libitum feeding on sexual maturation, ovarian morphology, and carcass traits in 8 strains of broiler breeder hens.

		M.E. Rustad* ¹ , F.E. Robinson ¹ , R.A. Renema ¹ , M.J. Zuidhof ² , and B. Fancher ³ , ¹ University of Alberta, Edmonton, AB, Canada, ² Alberta Agriculture, Food and Rural Development, Edmonton, AB, Canada, ³ Aviagen, Huntsville, Alabama.
8:45 AM	25	Natural presence of <i>Campylobacter</i> spp. in the internal organs of early, mid and late-life broiler breeder hens. L.J. Richardson* ¹ , N.A. Cox ¹ , R.J. Buhr ¹ , J.S. Bailey ¹ , J.L. Wilson ² , D.E. Cosby ¹ , and D.V. Bourassa ² , ¹ Russell Research Center, USDA-ARS-PMSRU, Athens, Georgia, ² University of Georgia, Athens.
9:00 AM	26	Influence of initial BW and dietary nutrient density on BW, egg production and nutrient utilization of fast and slow feathering broiler breeder hens. A. Mendoza-Reilly* ¹ , W. Dozier ² , and J. Wilson ¹ , ¹ The University of Georgia, Athens, ² South Control Poultry Research Center, USDA-ARS, Starkville, Mississippi.
9:15 AM	27	The sperm quality index of fresh chicken semen predicts semen quality after storage. P. Dumpala*, H. Parker, and C. McDaniel, <i>Mississippi State University, Mississippi State.</i>
9:30 AM	28	Effect of feed allocation program during the rearing and early production on body weight and fertility of broiler breeder males. H. Romero-Sanchez* ² and J. Brake ¹ , ¹ North Carolina State University, Raleigh, ² Universidad de Antioquia, Medellin, Colombia.
9:45 AM	29	Effect of incubation turning angle on hatchability, embryonic mortality, and malpositioned embryos. O. Elibol ² , K.E. Brannan* ¹ , and J. Brake ¹ , ¹ North Carolina State University, Raleigh, ² University of Ankara, Ankara, Turkey.
10:00 AM		Break.
10:15 AM	30	Effects of early and slow feed withdrawal times on life of flock production in commercial broiler breeders. R.K. Bramwell* ¹ , C.N. Coon ¹ , and C. Wiernusz ² , ¹ The University of Arkansas, Fayetteville, ² Cobb-Vantress, Inc., Siloam Springs, Arkansas.
10:30 AM	31	Effects of skip-a-day feeding versus everyday feeding in broiler breeder hens after housing. R.K. Bramwell* ¹ , C.N. Coon ¹ , and C. Wiernusz ² , ¹ University of Arkansas, Fayetteville, ² Cobb-Vantress, Inc., Siloam Springs, Arkansas.
10:45 AM	32	Effect of temperature during incubation on broiler chick development and growth. N. Leksrisompong*, P.W. Plumstead, H. Romero-Sanchez, and J. Brake, <i>North Carolina State University, Raleigh.</i>
11:00 AM	33	Effects of storage time and position with or without turning followed by two turning frequencies during incubation on hatchability of broiler hatching eggs. J. Brake* ¹ and O. Elibol ² , ¹ North Carolina State University, Raleigh, ² University of Ankara, Ankara, Turkey.
11:15 AM	34	Egg weight, fertility, and hatchability of broiler breeders as influenced by time of oviposition and breeder flock age. A.H. Zakaria ² , P.W. Plumstead* ¹ , H. Romero-Sanchez ¹ , N. Leksrisompong ¹ , J. Osborne ³ , and J. Brake ¹ , ¹ North Carolina State University, Raleigh, ² Damascus University, Damascus, Syria, ³ North Carolina State University, Raleigh.
11:30 AM	35	Effect of full feeding broiler breeder pullets until 1 or 3 wk of age on frame size, fatness and fleshing at 4, 8, 12, and 16 wk of age. R. Renema* ¹ , A. Pishnamazi ¹ , F. Robinson ¹ , and M. Zuidhof ² , ¹ University of Alberta, Edmonton, AB, Canada, ² Alberta Agriculture, Food and Rural Development, Edmonton, AB, Canada.

Immunology Immunology A Chair: M. Koci¹, A. McElroy², ¹North Carolina State University, ²Virginia Tech Meeting Room EF		
8:00 AM	36	Expression of reovirus sigma C protein in <i>Arabidopsis thaliana</i>. H. Wu* ¹ , Y. Williams ¹ , K. Gunn ¹ , R. Locy ² , N. Singh ² , and J. Giambrone ² , ¹ Alabama State University, Montgomery, ² Auburn University, Auburn, Alabama.
8:15 AM	37	Characterizing Rous sarcoma growth for major histocompatibility (B) complex haplotype B61. R L. Taylor, Jr.* ¹ , W.E. Briles ² , and J.E. Fulton ³ , ¹ University of New Hampshire, Durham, ² Northern Illinois University, DeKalb, ³ Hy-Line International, Dallas Center, Iowa.
8:30 AM	38	Controlled replication of chicken anemia virus: Implications for commercial breeders. M. Miller and K. Schat*, <i>Cornell University, Ithaca, New York.</i>
8:45 AM	39	Gut humoral immune response and resistance to <i>salmonella</i> challenge of progeny from breeders vaccinated with killed antigen. A. Rolon ¹ , J.S. Bailey* ² , P.S. Holt ³ , C. Hofacre ¹ , and J.L. Wilson ¹ , ¹ The University of Georgia, Athens, ² USDA Poultry Microbiological Safety Research Unit, Athens, Georgia, ³ USDA Russell Research Center, Athens, Georgia.
9:00 AM	40	Expression of innate immune functions in developing broiler gut associated lymphoid tissue in the immediate pre and posthatch period. E. Bar-Shira* and A. Friedman, <i>The Hebrew University of Jerusalem, Rehovot, Israel.</i>
9:15 AM	41	Temporal expression of immunoglobulin transporter genes in broiler gut epithelial barriers during the immediate pre- and post-hatch period. I. Bromberger* and A. Friedman, <i>The Hebrew University of Jerusalem, Rehovot, Israel.</i>
9:30 AM	42	Optimization of an invasion assay for <i>Eimeria tenella</i> sporozoites. D. Abi-Ghanem*, K. Ameiss, D. J. Caldwell, and L. R. Berghman, <i>Texas A&M University, College Station.</i>
9:45 AM	43	Prolactin receptor gene expression in chicken immune tissues during embryogenesis and post-hatch period. Z. Kang* and G. Bedecarrats, <i>University of Guelph, Guelph, ON, Canada.</i>
10:00 AM		Break.
10:15 AM	44	Somatostatin receptor subtype 2 is expressed in the chicken thymus and in a chicken T-cell line. X. Zhang* and L. Berghman, <i>Texas A&M University, College Station.</i>
10:30 AM	45	Is variation among broilers in their pulmonary hypertensive responsiveness to lipopolysaccharide (LPS) attributable to innate variation in nitric oxide (NO) production by mononuclear cells? O.T. Bowen*, R.F. Wideman, and G.F. Erf, <i>University of Arkansas, Fayetteville.</i>
10:45 AM	46	Effect of broiler strain and sex on macrophage inflammatory responses in cell culture. M. Torres* and E. Koutsos, <i>California Polytechnic State University, San Luis Obispo.</i>
11:00 AM	47	When do natural antibodies become unnatural? Observations from WUR selected lines. P. Cotter*, A. Lammers, and H. Parmentier, <i>Wageningen University, Wageningen, The Netherlands.</i>
11:15 AM	48	Similarities between chicken and turkey leukocyte surface markers.

M. Koci*¹, R. Ali¹, and G. Huang², ¹*North Carolina State University, Raleigh*, ²*Southern Biotechnology Associates Inc, Birmingham, Alabama*.

11:30 AM 49

Cell-mediated immunity in chickens: Time-course study on lymphocyte infiltration profiles during the wattle response in Ag-sensitized chickens.

I.R. Ramachandran and G.F. Erf*, *University of Arkansas, Fayetteville*.

Physiology

Physiology I

Chair: L. Adeola, *Purdue University*

Meeting Room I

8:00 AM 50

Migratory ability of the somatic nuclear transferred gonadal germ cells (nt-GGCs) in domestic chicken.

T. Minematsu, A. Tajima*, and Y. Kanai, *University of Tsukuba, Tsukuba, Ibaraki, Japan*.

8:15 AM 51

Gonadotropin inhibiting hormone does not affect circulating luteinizing hormone levels in the chicken.

C. Senthikumar*, S. Peterson, and G. Bedecarrats, *University of Guelph, Guelph, ON, Canada*.

8:30 AM 52

Role of the eyes in gonadal development in male chicks (*Gallus gallus*) following photostimulation.

T. Rathinam* and W. Kuenzel, *University of Arkansas, Fayetteville*.

8:45 AM 53

Association of duodenum mitochondrial complex activity, protein expression and protein oxidation with feed efficiency in broilers.

C. Ojano-Dirain*¹, N.R. Pumford¹, K. Lassiter¹, T. Wing², M. Cooper², and W. Bottje¹, ¹*University of Arkansas, Fayetteville*, ²*Cobb-Vantress Inc., Siloam Springs, Arkansas*.

9:00 AM 54

Expression of the activin type IA and type IB receptors during follicular development in broiler breeder hens.

J. Hoffman*, A. Davis, and M. Freeman, *University of Georgia, Athens*.

9:15 AM 55

Effects of dopamine and oxytocin receptor antagonists on the transition to brooding of young in turkeys.

A. Thayananuphat*¹, O. Youngren¹, S. Kang¹, T. Bakken¹, J. Proudman², and M. El Halawani¹, ¹*University of Minnesota, St Paul*, ²*United States Department of Agriculture, Beltsville, Maryland*.

9:30 AM 56

The effect of in ovo injection of L-carnitine on hatch rate of White Leghorn eggs.

W. Zhai*¹, S.L. Neuman², M.A. Latour¹, and P.Y. Hester¹, ¹*Purdue University, West Lafayette, Indiana*, ²*Astra Zeneca, Raleigh, North Carolina*.

9:45 AM 57

Expression of the mRNA for zona pellucida proteins D and B2 in two genetic lines of turkey hens that differ in fertility.

A. Benson*¹, A. Davis¹, M. Compton¹, B. Fairchild¹, and V. Christensen², ¹*University of Georgia, Athens*, ²*North Carolina State University, Raleigh*.

10:00 AM

Break.

10:15 AM 58

The effects of semen diluent and rate of dilution on the Sperm Quality Index and on ATP utilization, gas exchange, and ionic balance of broiler breeder sperm immediately following dilution.

H. Parker* and C. McDaniel, *Mississippi State University, Mississippi State*.

10:30 AM 59

Molecular cloning and tissue expression of chicken adiponectin cDNA: Food

<i>Pennsylvania State University, University Park.</i>		
10:45 AM	60	Effect of feed withdrawal on mucus and morphology of the small intestine of broilers. K.L. Thompson* and T.J. Applegate, <i>Purdue University, West Lafayette, Indiana.</i>
11:00 AM	61	Spontaneously occurring fibroid tumors of the laying hen oviduct. A. Doernte*, L. Stevenson, S. Oates, and W. Berry, <i>Auburn University, Auburn, Alabama.</i>
11:15 AM	62	Nitric oxide measurement in avian blood: Evaluation of two commonly used assays and the impact of aminoguanidine on plasma nitric oxide after injection of lipopolysaccharide. M.E. Chapman* and R.F. Wideman, <i>University of Arkansas, Fayetteville.</i>
11:30 AM	63	Effects of egg size and eggshell conductance on poult livability and body weight gain. S. Funderbunk* ¹ , V. Christensen ¹ , J. Grimes ¹ , M. Wineland ¹ , M. Mann ¹ , R. Neely ¹ , D. Ort ¹ , D. Rives ² , and G. Campbell ² , ¹ <i>North Carolina State University, Raleigh,</i> ² <i>Prestage Farms Inc., Clinton, North Carolina.</i>

POSTER PRESENTATIONS

Poster Session - Monday, (Presenters must be present from 9:30AM - 11:30AM) Chair: M.J. Wineland, North Carolina State University Ballroom B, Left and Right	
M1	A further examination of the role of dietary protein in regulating metabolism in the broiler. R. Rosebrough*, B. Russell, S. Poch, and M. Richards, <i>ANRI-USDA, Beltsville, Maryland.</i>
M2	Influence of red pepper, green tea supplemented diets varying in protein levels on the growth performance, feed consumption, feed conversion ratio, carcass characteristics and economic efficiency of broiler chicks. A. Eldeek*, <i>University of Alexandria, Alexandria, Egypt.</i>
M3	Effect of organic selenium (Sel-Plex) in combination with alfa-tocopherol (Vit. E) on fresh and frozen poultry meat. O. Pesut ¹ , L. Nollet* ² , and L. Tucker ² , ¹ <i>Faculty of Veterinary Medicine, Belgrade, Serbia & Montenegro,</i> ² <i>Alltech Biotechnology Centre, Dunboyne, Meath, Ireland.</i>
M4	Influence of red pepper, green tea supplemented diets varying in protein levels on the immune system, microbial count, test panel evaluation and plasma constituents of broiler. A. Eldeek*, <i>University of Alexandria, Alexandria, Egypt.</i>
M5	The effect of feeding <i>Solanum glaucophyllum</i> on eggshell strength in second-cycle White Leghorn hens. J. Fuller, Jr.* ¹ , J. Goff ² , B. Behrends ³ , S. Nissen ⁴ , and R. Horst ² , ¹ <i>MTI, Ames, Iowa,</i> ² <i>NADC, Ames, Iowa,</i> ³ <i>Sparboe Companies, Litchfield, Minnesota,</i> ⁴ <i>Iowa State University, Ames.</i>
M6	Effects of ingredient composition and processing of pre-starter diet and age of the breeders on the performance of chicks and broilers. R. Amara ² , J. F. M. Menten* ¹ , A. M. C. Racanicci ¹ , and J. Lecznieski ² , ¹ <i>ESALQ - USP, Piracicaba, SP, Brazil,</i> ² <i>Agribands Purina do Brasil, Paulinia, SP, Brazil.</i>
M7	Effects of alfalfa based molt diets on skeletal integrity of White Leghorns. W. K. Kim* ¹ , C. S. Dunkley ¹ , P. Y. Hester ² , L. F. Kubena ³ , D. J. Nisbet ³ , and S. C. Ricke ¹ , ¹ <i>Texas A & M University, College Station,</i> ² <i>Purdue University, West Lafayette, Indiana,</i> ³ <i>USDA-ARS, Southern Plains Agricultural Research Center, College Station, Texas.</i>

M8	Oxidative stability of frozen thigh meat from broilers fed oxidized poultry offal fat. A. M. C. Racanicci, J. F. M. Menten*, M. A. A. Regitano-d'Arce, and L. M. Pino, <i>Escola Superior de Agricultura Luiz de Queiroz - USP, Piracicaba, SP, Brazil.</i>
M9	Broiler live performance on wheat-based feeds supplemented with mannan oligosaccharides. J. P. Blake ¹ , J. B. Hess* ¹ , K. S. Macklin ¹ , S. F. Bilgili ¹ , T. Sefton ² , and A. Kocher ³ , ¹ <i>Auburn University, Auburn, Alabama</i> , ² <i>Alltech, Nicholasville, Kentucky</i> , ³ <i>Alltech, Meath, Ireland.</i>
M10	Cardiac and hepatic tissue fatty acid composition of broilers dying due to sudden death syndrome. G. Cherian*, M. P. Goeger, and J. C. Hermes, <i>Oregon State University, Corvallis.</i>
M11	Effect of dietary methionine sources on intestinal bacterial populations in broiler chickens. J. P. Dahiya, D. C. Wilkie, A. G. Van Kessel, and M. D. Drew*, <i>University of Saskatchewan, Saskatoon, SK, Canada.</i>
M12	Titration of spray-dried plasma in pelleted feed on broiler performance. J.M. Campbell*, J.D. Crenshaw, and L.E. Russell, <i>APC, Inc., Ankeny, Iowa.</i>
M13	Effect of pelleting and expander conditioning temperatures on performance of broilers fed pellets containing spray-dried plasma. J.M. Campbell* ¹ , J.D. Crenshaw ¹ , L.E. Russell ¹ , K.C. Behnke ² , and P.M. Clark ² , ¹ <i>APC, Inc., Ankeny, Iowa</i> , ² <i>Kansas State University, Manhattan.</i>
M14	Effects of eggshell 49 supplementation to laying hen diets containing different levels of calcium on performance and egg quality. L. Tucker ¹ , L. Nollet* ¹ , and H. Sener ² , ¹ <i>Alltech Biotechnology Centre, Dunboyne, Meath, Ireland</i> , ² <i>Alltech Turkey, Izmir, Turkey.</i>
M15	Responses to antibiotic growth promoters, mannanoligosaccharides and organic acids in Salmonella-challenged broilers. M. Loddi ¹ , A. Malaguido ² , and A. Kocher* ³ , ¹ <i>Universidade Estadual de Ponta Grossa, Brazil</i> , ² <i>Alltech do Brasil, Curitiba, PR, Brasil</i> , ³ <i>Alltech Biotechnology Centre, Meath, Ireland.</i>
M16	The effect of phytase enzyme on early egg production and egg quality of laying hens. A.S. Hussein*, <i>United Arab Emirates University, Alain, United Arab Emirates.</i>
M17	Apparent metabolizable energy of diets based on wheat, sorghum or corn for the newly hatched broiler chick. D.V. Thomas and V. Ravindran*, <i>Massey University, Palmerston North, New Zealand.</i>
M18	Performance and carcass yield of broilers fed with diets supplemented or not with antibiotic and anticoccidian drugs. M.B. Cafe*, C.P. Cruz, A.S.C. Oliveira, J.H. StringhiniI, M.A. Andrade, and L.S. Chaves, <i>Escola de Veterinaria - Universidade Federal de Goias, Goiania, Goias, Brazil.</i>
M19	Effects of source of fat and fiber level on productive performance in broiler from 1 to 21 d of age. A. González-Serrano, J.M. González-Alvarado, R. Lázaro, and G.G. Mateos*, <i>Universidad Politécnica de Madrid, Madrid, Spain.</i>
M20	Effects of phytase supplementation to diets with reduced available phosphorus content on performance and carcass traits of broilers. M. Argüelles*, H.L. Santiago, and A.A. Rodríguez, <i>University of Puerto Rico, Mayagüez, Puerto Rico.</i>
M21	Effects of phytase supplementation to diets with reduced available phosphorus content on tibia ash and mineral excretion of broilers. H.L. Santiago*, M. Argüelles, and A.A. Rodríguez, <i>University of Puerto Rico - Mayagüez Campus, Mayagüez, Puerto Rico.</i>
M22	Effect of organic trace mineral on performance, carcass quality and physiological parameters in broilers. A.G. Bertechini*, R.K. Kato, A. Geraldo, E.J. Fassani, J.A. Brito, and G.O. Figueiredo, <i>Universidade</i>

	<i>Federal de Lavras, Lavras, Minas Gerais, Brazil.</i>
M23	The effects of in ovo feeding of arginine and/or beta-hydroxy-beta-methylbutyrate (HMB) on glycogen metabolism and growth in turkey poults. O. Foye* ¹ , P. Ferket ¹ , and Z. Uni ² , ¹ North Carolina State University, Raleigh, ² Hebrew University of Jerusalem, Rehovot, Israel.
M24	Effect of dietary nitrogen intake on broiler hepatic Spot 14 mRNA expression. M. Hidalgo* and A. Davis, <i>The University of Georgia, Athens.</i>
M25	Impact of dietary amino acid density on broilers grown to small bird market. A. Corzo* ¹ , M.T. Kidd ¹ , W.A. Dozier ² , T.J. Walsh ³ , and S.D. Peak ³ , ¹ Mississippi State University, Mississippi State, ² USDA-ARS, Poultry Research Unit, Mississippi State, Mississippi, ³ Novus International, St. Louis, Missouri.
M26	Incorporation of an <i>E. Coli</i> phytase in broiler diets: Effect on growth and processing parameters. P. Pillai*, J. Mehaffey, C. Owens, and J. Emmert, <i>University of Arkansas, Fayetteville.</i>
M27	Effect of gelatinizing dietary starch through feed processing on 0-to-3-week broiler performance and metabolism. J.S. Moritz* ¹ , A.S. Parsons ¹ , N.P. Buchanan ¹ , W.B. Calvalcanti ² , K.R. Cramer ² , and R.S. Beyer ² , ¹ West Virginia University, Morgantown, ² Kansas State University, Manhattan.
M28	The use of dual-Energy x-ray absorptiometry to evaluate the bone mineral status of laying hens during molting and reestablishment of lay. N.P. Johnston*, S. Fullmer, E. Maceda, R.T. Davidson, and A.L. Campbell, <i>Brigham Young University, Provo, Utah.</i>
M29	0-to-6 week broiler performance effects of bacitracin/3-nitro replacement in a cocci vaccination program. A. Parsons* ¹ , A. McElroy ¹ , T. Sefton ² , and C. Novak ¹ , ¹ Virginia Tech, Blacksburg, ² Alltech, Inc., Guelph, ON, Canada.
M30	The effects of source and level of dietary copper on copper and zinc metabolism in broiler chicks. J.L. Pierce*, A.J. Pescatore, M.J. Ford, and A.H. Cantor, <i>Alltech-University of Kentucky Nutrition Research Alliance, Lexington.</i>
M31	Increases in feathermeal digestibility by the proteinases produced by <i>Bacillus Subtilis</i> var. Natto. P. Herrera, W. Kim*, and S. Ricke, <i>Texas A&M University, College Station.</i>
M32	Nutritional means to lower trace mineral excretion from poultry without compromising performance. J.L. Pierce*, B.L. Shafer, R. Power, and K.A. Dawson, <i>Alltech-University of Kentucky Nutrition Research Alliance, Lexington.</i>
M33	Impact of Avizyme 1500 on apparent ileal amino acid digestibility in poultry. J.C. Remus* ¹ , M. Hruby ² , and E.E.M. Pierson ¹ , ¹ Danisco Animal Nutrition, St. Louis, Missouri, ² Danisco Animal Nutrition, Marlborough, Wilts, United Kingdom.
M34	The effect of Avizyme 1502® on early poult performance from 0-21 days. C. Troche* ¹ , X. Sun ¹ , A. McElroy ¹ , J. Remus ² , and C. Novak ¹ , ¹ Virginia Tech, Blacksburg, ² Danisco Animal Nutrition, Carol Stream, Illinois.
M35	The effect of rearing programs on reproductive performance and carcass traits of ultra high yield type broiler breeder hens. M. Beer* and C.N. Coon, <i>The University of Arkansas, Fayetteville.</i>
M36	Metabolizable energy value for corn distillers dried grains with solubles in turkey diets. S.L. Noll* ¹ , J. Brannon ¹ , J.L. Kalbfleisch ² , and K.D. Roberson ² , ¹ University of Minnesota, St. Paul, ² Michigan State University, East Lansing.

M37	The crude protein and amino acid requirements for fertility and production for broiler breeders. M. Beer*, J. Sun, J. Lu, K. Bramwell, and C.N. Coon, <i>University of Arkansas, Fayetteville.</i>
M38	Effect of phytase addition in diets for broilers with several phosphorus levels. F.J. Picón-Rubio ¹ , J.R. Kawas Garza ² , H. Fimbres Durazo ¹ , J.L. Lazcano Villareal ¹ , F.A. Santoyo* ¹ , and J.F. Garza ² , ¹ <i>Universidad Autónoma de Nuevo León, Monterrey, Nuevo León, México,</i> ² <i>Universidad Autónoma de Nuevo León, Marín, Nuevo León, México.</i>
M39	Effect of dietary supplementation of organic minerals and phytase on mineral concentration in manure of brown egg laying replacement pullets. A. Mañón, A. Cantor*, A. Pescatore, M. Ford, H. Gillespie, and M. Daley, <i>Alltech-University of Kentucky Nutrition Research Alliance, Lexington.</i>
M40	Influence of supplemented Azolla meal in lipid and fatty acid content in egg yolk and overall egg quality. C. Narciso-Gaytán* ^{1,4} , E. Ávila-González ² , S. Carrillo-Domínguez ³ , and M.X. Sanchez-Plata ⁴ , ¹ <i>Universidad Autónoma Chapingo, Chapingo, Mexico,</i> ² <i>Universidad Nacional Autónoma de México, México D.F., Mexico,</i> ³ <i>Instituto Nacional de la Nutrición Salvador Zubirán, México D.F., Mexico,</i> ⁴ <i>Texas A&M University, College Station.</i>
M41	Nutritive value for poultry of an extruded mixture of canola seeds and peas. A. Golian* ¹ , L. Campbell ¹ , J. Davidson ² , and H. Janmohammadi ¹ , ¹ <i>The University of Manitoba, Winnipeg, Manitoba, Canada,</i> ² <i>EXP-FEEDS Inc., Shoal Lake, Manitoba, Canada.</i>
M42	Identification of two splice variants of the chicken cationic amino acid transporter-2 gene. D.I. Morris and B.D. Humphrey*, <i>University of Maryland, College Park.</i>
M43	The effect of water manganese on broiler growth performance. A. Batal*, B. Fairchild, C. Ritz, and P. Vendrell, <i>University of Georgia, Athens.</i>
M44	Chicken cecal methanogen quantification by MPN and preliminary identification of methanogenic archaea based on 16S rDNA. S. Saengkerdsub ¹ , S. A. Sirsat ¹ , R. C. Anderson ² , C. L. Woodward ¹ , W. K. Kim* ¹ , D. J. Nisbet ² , and S. C. Ricke ¹ , ¹ <i>Texas A&M University, College Station,</i> ² <i>US Department of Agriculture, College Station, Texas.</i>
M45	Characterization of <i>Salmonella</i> isolates by serotype, antibiotic susceptibility test and pulsed field gel electrophoresis from the feces of laying hens in a commercial layer complex. X. Li* ¹ , J. Levine ¹ , and B. Sheldon ² , ¹ <i>Department of Public Health and Pathology,</i> ² <i>North Carolina State University, Raleigh.</i>
M46	The influence of a fructooligosaccharide (FOS) prebiotic combined with alfalfa molt diets on the gastrointestinal tract of laying hens and <i>Salmonella enteritidis</i>. L.F. Kubena* ¹ , L.M. Donalson ² , J.L. McReynolds ¹ , C.L. Woodward ² , S.C. Ricke ² , J.A. Byrd ¹ , and D.J. Nisbet ¹ , ¹ <i>USDA-ARS, SPARC, College Station, Texas,</i> ² <i>Texas A&M University, College Station.</i>
M47	Recovery and distribution of <i>Escherichia coli</i> from poultry house surgical shoe covers, shallow litter, and deep litter samples. B. McCrea*, K. Macklin, R. Norton, J. Hess, and S. Bilgili, <i>Auburn University, Auburn, Alabama.</i>
M48	Recovery of <i>Campylobacter jejuni</i> from broiler house samples during four consecutive flocks: Dendrogram. B. McCrea*, K. Macklin, R. Norton, J. Hess, and S. Bilgili, <i>Auburn University, Auburn, Alabama.</i>
M49	The influence of mushroom extract on broiler performance and health. W. Willis*, O. Isikhuemhen, and C. Murray, <i>North Carolina A&T State University, Greensboro.</i>
M50	In vitro fermentation of various feed substrates using chicken cecal inocula. K. Dunkley* ¹ , C. Dunkley ¹ , N. Njongmeta ¹ , T. Callaway ² , M. Hume ² , L. Kubena ² , D. Nisbet ² , and S. Ricke ¹ , ¹ <i>Texas A & M University, College Station,</i> ² <i>USDA-ARS, Southern Plains Agricultural Research Center, College Station, Texas.</i>

M51	Presence of various naturally occurring bacteria in unabsorbed yolks of six week old commercial broilers. N.A. Cox* ¹ , L.J. Richardson ¹ , R.J. Buhr ¹ , J.K. Northcutt ¹ , B.D. Fairchild ² , J.M. Mauldin ² , and J.S. Bailey ¹ , ¹ USDA-ARS, Athens, Georgia, ² University of Georgia, Athens.
M52	Presence of <i>Campylobacter jejuni</i> in the internal organs of inoculated broiler breeder hens. N.A. Cox* ¹ , L.J. Richardson ¹ , R.J. Buhr ¹ , J.S. Bailey ¹ , J.L. Wilson ² , D.E. Cosby ¹ , and D.V. Bourassa ² , ¹ USDA-ARS-Russell Research Center, Athens, Georgia, ² University of Georgia, Athens.
M53	Incidence and size distribution of unabsorbed yolk sacs in commercial broilers processed at six weeks of age. R.J. Buhr* ¹ , D.V. Bourassa ^{1,2} , J.K. Northcutt ¹ , L.J. Richardson ¹ , N.A. Cox ¹ , and B.D. Fairchild ² , ¹ USDA-ARS Russell Research Center, Athens, Georgia, ² The University of Georgia, Athens.
M54	Effect of drinking water iron concentration on broiler performance. B. Fairchild*, A. Batal, C. Ritz, and P. Vendrell, <i>University of Georgia, Athens.</i>
M55	Effect of water iron concentration on soluble phosphorous levels in broiler manure. C. Ritz*, A. Batal, B. Fairchild, and P. Vendrell, <i>The University of Georgia, Athens.</i>
M56	Effects of diluents, cryoprotectants, equilibration time, and thawing temperature on cryopreservation of duck semen. Z. Y. Niu ¹ , X. F. Han ¹ , F. Z. Liu* ¹ , and C. S. Yang ^{1,2} , ¹ Northwest A & F University, Yangling, Shaanxi, China, ² National Center of Poultry Science, Shanghai, China.
M57	A comparison of fat deposition and heterotic effect analysis between different meat-type chickens during growing period. F. Z. Liu*, Z. Y. Niu, and S. W. Zhai, <i>Northwest A&F University, Yangling, Shaanxi, China.</i>
M58	Colibacillosis and turkey osteomyelitis complex in turkeys selected for increased body weight and subjected to stress. G. R. Huff* ¹ , W. E. Huff ¹ , N. C. Rath ¹ , J. M. Balog ¹ , N. B. Anthony ² , and K. E. Nestor ³ , ¹ USDA/ARS/PPPSRU, Fayetteville, Arkansas, ² University of Arkansas, Fayetteville, ³ OARDC, Wooster, Ohio.
M59	Longitudinal vs. cumulative analysis of fertility and hatchability in chickens. R.L. Sapp* ¹ , R. Rekaya ¹ , I. Misztal ¹ , and T. Wing ² , ¹ The University of Georgia, Athens, ² Cobb-Vantress, Inc., Siloam Springs, Arkansas.
M60	Serum activity of glutamic oxaloacetic transaminase in broiler chickens that died from sudden death syndrome. H.R. Aliakbarpour* and D. Qujeq, <i>Azad Islami University, Babol, Mazanderan, Iran.</i>
M61	Serum activities of creatine phosphokinase and lactate dehydrogenase in broiler chickens that died from sudden death syndrome. D. Qujeq* and H.R. Aliakbarpour, <i>Azad Islami University, Babol, Mazanderan, Iran.</i>

SYMPOSIA AND ORAL SESSIONS

Environment and Management Broilers I Chair: B.D. Fairchild, University of Georgia Auditorium		
1:00 PM	64	The effect of holding time without water on broiler performance, yolk sac retention and gut integrity.

		B.D. Fairchild* ¹ , J.M. Mauldin ¹ , J.K. Northcutt ² , M.B. Cole ³ , M.D. Darby ³ , and R.J. Buhr ² , ¹ University of Georgia, Athens, ² USDA Russell Research Center, Athens, Georgia, ³ Cole Services, Stockbridge, Georgia.
1:15 PM	65	Evaluation of lactose on clinical intestinal lesions in poultry with Necrotic Enteritis. J. McReynolds*, J. Byrd, L. Kubena, and D. Nisbet, <i>USDA-ARS-SPARC, College Station, Texas.</i>
1:30 PM	66	Evaluation of lactose on the gastrointestinal microbial ecology in poultry with necrotic enteritis. J.A. Byrd*, J.L. McReynolds, L.F. Kubena, and D.J. Nisbet, <i>USDA/ARS/SPARC, College Station, Texas.</i>
1:45 PM	67	The effect of ascorbic acid on the intestinal microflora of stressed broilers. M. Putsakum*, Y. Vizzier Thaxton, J.P. Thaxton, and S. Anderson, <i>Mississippi State University, Mississippi State.</i>
2:00 PM	68	Effect of glutamine supplementation on intestinal levels of <i>Salmonella</i> in broiler chicks. J.W.J. Bowers*, Y.O. Fasina, and S.R. McKee, <i>Auburn University, Auburn, Alabama.</i>
2:15 PM	69	Genotypes, serotypes and antibiotic resistance profiles of <i>Salmonella</i> isolated from commercial North Carolina turkey farms. F. Santos*, D. D'Souza, L. Jaykus, P. Ferket, and B. Sheldon, <i>North Carolina State University, Raleigh.</i>
2:30 PM	70	Impact of alternative broiler genotype and production system on growth performance and carcass yield. A. Fanatico*, P. Pillai, C. Owens, and J. Emmert, <i>University of Arkansas, Fayetteville.</i>
2:45 PM	71	Essential oil blends and <i>Eimeria spp.</i> vaccination and/or infection over microbial uricase activity in ileal and cecal contents of broilers. J. Edwards ¹ , E.O. Oviedo-Rondón* ^{1,2} , S. Clemente-Hernández ^{1,3} , and B.A. Clack ¹ , ¹ Stephen F. Austin State University, Nacogdoches, Texas, ² North Carolina State University, Raleigh, ³ Universidad Autónoma de Chihuahua, Chihuahua, México, Chihuahua, México.
3:00 PM		Break.
3:15 PM	72	Incorporation of antibiotic residues within different sections of breast muscle tissues of broiler chickens. I. Reyes-Herrera*, K. Cole, P.J. Blore, and D.J. Donoghue, <i>University of Arkansas, Fayetteville.</i>
3:30 PM	73	Recovery of <i>Campylobacter jejuni</i> from broiler house samples during four consecutive flocks: Isolate distribution. B. McCrea*, K. Macklin, R. Norton, J. Hess, and S. Bilgili, <i>Auburn University, Auburn, Alabama.</i>
3:45 PM	74	Effects of nitrocompounds on uric acid-utilizing microorganisms isolated from poultry manure. W.K. Kim* ¹ , A.L. Ratliff ¹ , R.C. Anderson ² , D.J. Nisbet ² , and S.C. Ricke ¹ , ¹ Texas A & M University, College Station, ² USDA-ARS, Southern Plains Agricultural Research Center, College Station, Texas.
4:00 PM	75	Weights of yolk reserves and carcass traits of broiler chicks from selected parent stock and pure lines. N. Wolanski* ¹ , F. Robinson ¹ , R. Renema ¹ , V. Carney ² , and B. Fancher ³ , ¹ University of Alberta, Edmonton, AB, Canada, ² Alberta Agriculture, Food and Rural Development, Edmonton, AB, Canada, ³ Aviagen, North America, Huntsville, Alabama.
4:15 PM	76	Effects of organic selenium (Sel-Plex) on oxidative stress induced by an in-feed toxin.

<i>Prairie View, Texas, ²Alltech, Guelph, Canada.</i>		
4:30 PM	77	Ciprofloxacin resistance of <i>Campylobacter</i> isolated from broiler gastrointestinal tracts. M. Farnell* ¹ , A. Donoghue ¹ , K. Cole ² , I. Reyes-Herrera ² , P. Blore ² , K. Pandya ² , and D. Donoghue ² , ¹ <i>Agricultural Research Service, USDA, Fayetteville, Arkansas</i> , ² <i>University of Arkansas, Fayetteville.</i>
4:45 PM	78	Effect of bismuth citrate on <i>Campylobacter</i> colonization in broilers. M. Farnell* ¹ , A. Donoghue ¹ , K. Cole ² , I. Reyes-Herrera ² , F. Solis de los Santos ² , M. Dirain ² , P. Blore ² , K. Pandya ² , and D. Donoghue ² , ¹ <i>Agricultural Research Service, USDA, Fayetteville, Arkansas</i> , ² <i>University of Arkansas, Fayetteville.</i>

Genetics Genetics I Chair: G. Barbato, Pennsylvania State University Meeting Room EF		
1:00 PM	79	The effect of genotype on internal egg temperature and embryo growth in turkeys. M.S. Lilburn* and J. Anderson, <i>Ohio State University/OARDC, Wooster.</i>
1:15 PM	80	Evaluation of embryonic turkey myogenic cells in two divergent lines. M. Malone*, J. Reddish, M. Wick, and M. Lilburn, <i>The Ohio State University, Columbus.</i>
1:30 PM	81	Broiler growth and development as influenced by divergent selection for ascites. H.O. Pavlidis*, L.K. Stamps, J.M. Balog, and N.B. Anthony, <i>University of Arkansas, Fayetteville.</i>
1:45 PM	82	Broiler lines differing in a major dominant gene for resistance to the ascites syndrome. S. Druyan* ¹ , A. Ben-David ² , S. Yahav ³ , and A. Cahaner ¹ , ¹ <i>The Hebrew University, Rehovot, Israel</i> , ² <i>Be'er Tuvia Poultry Disease Laboratory, Be'er Tuvia, Israel</i> , ³ <i>Agricultural Research Organization, Bet Dagan, Israel.</i>
2:00 PM	83	Statistical comparison of nonlinear breast yield curves. M. Zuidhof*, <i>Alberta Agriculture, Food and Rural Development, Edmonton, AB, Canada.</i>
2:15 PM	84	Developmental profiling of telomerase genes by quantitative real-time pcr in the chicken embryo. T.H. O'Hare* and M.E. Delany, <i>University of California, Davis.</i>
2:30 PM	85	Association of polymorphisms in MC3R/4R and UCP genes with ascites resistance. P. Sharma*, W. Bottje, and R. Okimoto, <i>University of Arkansas, Fayetteville.</i>
2:45 PM	86	Myosin isoform transitions in genetically distinct turkey lines. F. Cihla*, S. Graham, J.M. Reddish, M. Wick, and M.S. Lilburn, <i>The Ohio State University, Columbus.</i>
3:00 PM	87	A retrovirus insertion causes abnormal expression of the tyrosinase gene in recessive white chickens. C.M. Chang* ¹ , J.L. Coville ¹ , J.P. Furet ² , A. Oulmouden ⁴ , G. Coquerelle ¹ , D. Gourichon ³ , and M. Tixier-Boichard ¹ , ¹ <i>National Institute for Agronomic Research, UMR INRA/INA P-G, Jouy-en-Josas, France</i> , ² <i>National Institute for Agronomic Research, UEPSD, INRA, Jouy-en-Josas, France</i> , ³ <i>National Institute for Agronomic Research, INRA, Nouzilly, France</i> , ⁴ <i>INRA/University of Limoges, Limoges, France.</i>

Nutrition Amino Acids Chair: A. Corzo, Mississippi State University		
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Ballroom A, Left		
1:00 PM	88	Digestible sulfur amino acid requirement variation in broilers due to sex, rearing environment, and performance parameters. B. Lumpkins* and A. Batal, <i>University of Georgia, Athens.</i>
1:15 PM	89	Standardized ileal amino acid digestibility of crystalline amino acids is close to 100% regardless of the standardization method. D. Hoehler* ¹ , A. Lemme ¹ , C.O. Brito ² , and H.S. Rostagno ² , ¹ <i>Degussa Corporation, Kennesaw, Georgia</i> , ² <i>University of Vicosa, Vicosa, Minas Gerais, Brazil.</i>
1:30 PM	90	Effects of age on amino acid digestibility in turkeys. O. Aimuwu* and M. Lilburn, <i>The Ohio State University/OARDC, Wooster.</i>
1:45 PM	91	Digestible lysine levels in the pre-laying and pre-peak periods for laying hens. R.M. Jardim Filho*, J.H. Stringhini, F.B. Carvalho, M.S. Matos, M.B. Cafe, and L.F. Reis, <i>Universidade Federal de Goias, Goiania, Goias, Brasil.</i>
2:00 PM	92	The effect of supplemental glutamine on growth performance and immune response of broilers vaccinated and challenged with <i>Eimeria acerulina</i> and <i>Eimeria maxima</i>. S. Bartell* and A. Batal, <i>University of Georgia, Athens.</i>
2:15 PM	93	The effects of sex and rearing environments on the digestible threonine requirement of broilers. B. Lumpkins* and A. Batal, <i>University of Georgia, Athens.</i>
2:30 PM	94	Amino acid density and L-threonine response in Ross broilers. W.S. Virden* ¹ , A. Corzo ¹ , W.A. Dozier, III ² , D.J. Burnham ³ , and M.T. Kidd ¹ , ¹ <i>Mississippi State University, Mississippi State</i> , ² <i>USDA-ARS, Poultry Research Unit, Mississippi State, Mississippi</i> , ³ <i>Ajinomoto Heartland, Chicago, Illinois.</i>
2:45 PM	95	The effects of in ovo feeding of beta-hydroxy-beta-methylbutyrate (HMB) and arginine on jejunal expression and function in turkeys. O. Foye* ¹ , P. Ferket ¹ , and Z. Uni ² , ¹ <i>North Carolina State University, Raleigh</i> , ² <i>The Hebrew University of Jerusalem, Rehovot, Israel.</i>
3:00 PM		Break.
3:15 PM	96	The effect of glutamine manufacturing on growth performance and the development of the immune system of broilers. S. Bartell* and A. Batal, <i>University of Georgia, Athens.</i>
3:30 PM	97	Effect of methionine level on broilers submitted to immunological stimulus. L. Rubin ¹ , A. Ribeiro* ¹ , C. Canal ¹ , A. Kessler ¹ , L. Kratz ¹ , A. Santos ¹ , J. Barbi ² , R. Gonzalez-Esquerria ² , and M. Vazquez-Anon ² , ¹ <i>UFRGS, Porto Alegre, RS, Brazil</i> , ² <i>Novus International, St Louis, Missouri.</i>
3:45 PM	98	Effect of dietary methionine on breast muscle accretion and protein expression. A. Corzo*, M.T. Kidd, A. Shack, and S.C. Burgess, <i>Mississippi State University, Mississippi State.</i>
4:00 PM	99	Methionine sources and sodium levels impact broilers performance under Brazilian summer conditions. A. Ribeiro* ¹ , A. Kessler ¹ , T. Viola ¹ , J. Barbi ² , R. Gonzales-Esquerria ² , and M. Vazques-Anon ² , ¹ <i>DZ-UFRGS, Porto Alegre, RS, Brazil</i> , ² <i>Novus International, St Louis, Missouri.</i>
4:15 PM	100	Response to lysine levels over dynamic development of broilers. S. Clemente-Hernández ¹ , F. Salvador ² , and E.O. Oviedo-Rondón* ¹ , ¹ <i>Stephen F. Austin State University, Nacogdoches, Texas</i> , ² <i>Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México.</i>

4:30 PM	101	Growth responses, plasma metabolites, nitrogen excretion, and ammonia production of male broilers provided diets varying in amino acid density. W.A. Dozier, III* ¹ , M.T. Kidd ² , A. Corzo ² , D. Miles ³ , and S.L. Branton ¹ , ¹ USDA-ARS Poultry Research Unit, Mississippi State, Mississippi, ² Mississippi State University, Mississippi State, ³ USDA-ARS Forage and Waste Management, Mississippi State, Mississippi.
4:45 PM	102	Influence of dietary peptide levels on endogenous amino acid flow in broiler chickens. V. Ravindran*, S.M. Rutherford, D.V. Thomas, P.C.H. Morel, and P.J. Moughan, <i>Massey University, Palmerston North, New Zealand.</i>

Physiology Physiology II Chair: S. Nahashion, Tennessee State University Meeting Room I		
1:00 PM	103	Effect of microgravity on mammillary cones of Japanese Quail eggs. S. Westmoreland* ¹ , T. Halupnik ¹ , J. Walker ¹ , and P. Hester ² , ¹ The University of Texas, Arlington, ² Purdue University, West Lafayette, Indiana.
1:15 PM	104	Use of a vascular access port for the measurement of pulsatile luteinizing hormone secretion in old broiler breeders. C. Senthikumar* ¹ , S. Peterson ¹ , M. Taylor ² , and G. Bédécarrats ¹ , ¹ University of Guelph, Guelph, ON, Canada, ² Ontario Veterinary College, Guelph, ON, Canada.
1:30 PM	105	Soy phytoestrogen effects on progesterone receptor and ovalbumin synthesis in chick oviduct. L. Stevenson*, A. Doernte, S. Oates, A. Peterson, and W. Berry, <i>Auburn University, Auburn, Alabama.</i>
1:45 PM	106	Interconversion of corticosterone and dehydrocorticosterone in liver, kidney and intestine of the chicken. A. Katz*, R. Meidan, and B. Robinzon, <i>The Hebrew University of Jerusalem, Jerusalem, Israel.</i>
2:00 PM	107	The efficacy of intracerebroventricular injections of arginine vasotocin on plasma corticosterone levels in undisturbed male and female broilers (<i>Gallus gallus</i>). F. Madison*, A. Jurkevich, and W. Kuenzel, <i>University of Arkansas, Fayetteville.</i>
2:15 PM	108	Regulation of transforming growth factor beta on decorin expression during myogenesis in poultry. X. Li* and S. Velleman, <i>The Ohio State University, Ohio Agricultural Research and Development Center, Wooster.</i>
2:30 PM	109	Effect of Melengestrol Acetate (MGA) on the production of yolk proteins by the liver. J.M. Koch* ¹ , J.S. Moritz ¹ , D.C. Lay Jr. ² , and M.E. Wilson ¹ , ¹ West Virginia University, Morgantown, ² USDA-ARS-LBRU, West Lafayette, Indiana.
2:45 PM	110	Expression profiles of prolactin receptors during chicken embryonic development. C.Y. Wang*, Y-J Wang, and F.C. Leung, <i>The University of Hong Kong, Hong Kong, HK-SAR, China.</i>
3:00 PM		Break.
3:15 PM	111	Regulation of chicken Heparin-binding EGF-like Growth Factor (HB-EGF) Expression by EGF and TGFα in the cultured ovarian granulosa cells. Y-J. Wang*, J. Li, and F.C. Leung, <i>The University of Hong Kong, Hong Kong, HK-SAR, China.</i>

3:30 PM	112	Effects of injected gluconeogenic supplements on the physiology of broilers from young breeders. E. Peebles ¹ , W. Berry ² , R. Keirs* ¹ , L. Bennett ¹ , S. Park ¹ , and P. Gerard ¹ , ¹ Mississippi State University, Mississippi State, ² Auburn University, Auburn, Alabama.
3:45 PM	113	Serotonin receptor subtypes influence prolactin secretion in the turkey. M. El Halawani* ¹ , O. Youngren ¹ , J. Proudman ² , and Y. Chaiseha ³ , ¹ University of Minnesota, St. Paul, ² United States Department of Agriculture, Beltsville, Maryland, ³ Suranaree University of Technology, Thailand.

SYMPOSIA AND ORAL SESSIONS

Environment and Management Broilers II		
Chair: G.W. Malone, University of Delaware		
Auditorium		
7:45 AM	114	Fire fighting foam as an alternative method of mass euthanasia for meat-type poultry flocks. E. Benson ¹ , R. Alphin ¹ , G. Malone* ¹ , M. Dawson ¹ , G. Van Wicklen ¹ , and I. Estevez ² , ¹ University of Delaware, Newark, ² University of Maryland, College Park.
8:00 AM	115	Litter bacterial levels associated with broilers fed mannan oligosaccharides. K.S. Macklin* ¹ , J.P. Blake ¹ , B.A. McCrea ¹ , R.A. Norton ¹ , J.B. Hess ¹ , S.F. Bilgili ¹ , T. Sefton ² , and A. Kocher ² , ¹ Auburn University, Auburn, ² Alltech, Nicholasville, Kentucky.
8:15 AM	116	Impact of daylength and light intensity on live performance and an indicator of long-term stress in broilers. J.C. Townsend*, R.J. Lien, J.B. Hess, S.R. McKee, and S.F. Bilgili, Auburn University, Auburn.
8:30 AM	117	Effects of season on nitrogen mass balance of broilers. C. Coufal*, P. Niemeyer, and J. Carey, Texas A&M University, College Station.
8:45 AM	118	Effects of recycling on nutrient composition of loose and caked broiler litter. C. Coufal*, P. Niemeyer, and J. Carey, Texas A&M University, College Station.
9:00 AM	119	Modeling the growth and death of <i>Salmonella</i> in poultry litter. J.B. Payne* and B.W. Sheldon, North Carolina State University, Raleigh, NC.
9:15 AM	120	Broiler barn surface type and presence of organic material influences the ability of disinfectants to reduce bacterial populations. P. Ward*, M. LaForge, S. Gibson, L. McMullen, and G. Fasenko, University of Alberta, Edmonton, AB, Canada.
9:30 AM	121	Effects of slaughter plant and time on gross composition of poultry processing wastewater particulate matter. B. Kiepper*, W. Merka, and D. Fletcher, University of Georgia, Athens.
9:45 AM	122	Performance of broiler males through 8 weeks production in response to supplemental corn-soybean enzymes after exposure to <i>Campylobacter jejuni</i>. E. Moran* and O. Oyarzabal, Auburn University, Auburn University, Alabama.
10:00 AM		Break.
10:15 AM	123	Effect of midnight feeding on egg production and quality of white- and brown- egg-

		laying hens. C.M. Riczu*, K.L. Nadeau, and D.R. Korver, <i>University of Alberta, Edmonton, AB, Canada.</i>
10:30 AM	124	Stocking density effects on male broilers destined for fast-food markets. W.A. Dozier, III* ¹ , J.P. Thaxton ² , S.L. Branton ¹ , and W.B. Roush ¹ , ¹ <i>USDA-ARS Poultry Research Unit, Mississippi State</i> , ² <i>Mississippi State University, Mississippi State.</i>
10:45 AM	125	Effects of density on movement and use of space in broilers. I. Estevez*, M.S. Freed, and M.C. Christman, <i>University of Maryland, College Park.</i>
11:00 AM	126	Nutritional value of poultry litter ash fed to broiler chickens. J.P. Blake* and J.B. Hess, <i>Auburn University, Auburn, Alabama.</i>
11:15 AM	127	Direct substitution of dicalcium phosphate with poultry litter ash in broiler diets. J.P. Blake* and J.B. Hess, <i>Auburn University, Auburn, Alabama.</i>
11:30 AM	128	Pennsylvania research/extension programs on vegetative shelter belts for poultry farms. A. Adrizal*, P. Patterson, M. Hulet, and R. Bates, <i>Pennsylvania State University, University Park.</i>
11:45 AM	129	Effect of feed withdrawal on total antioxidant, antioxidant enzyme activities, H/L ratio, and carcass characteristics in male broiler chicks subjected to acute heat stress. K. Mahmoud* and O. Al Marashdeh, <i>Jordan University of Science & Technology, Irbid, Jordan.</i>
12:00 PM	130	Maximizing efficiency: Feeding strategies of broilers. E.H. Leone* and I. Estevez, <i>University of Maryland, College Park.</i>

SYMPOSIUM AND ORAL SESSIONS

Extension and Instruction Scientific Session Chair: J. Emmert, University of Arkansas Ballroom A, Right		
8:00 AM	131	Effect of two protein regimens and two lighting intensities on performance of Hungarian partridge (<i>Perdix perdix</i>). J.P. Blake*, J.B. Hess, and W.D. Berry, <i>Auburn University, Auburn, Alabama.</i>
8:15 AM	132	Overview of management practices of small flock owners in Minnesota. J. Griggs* ¹ , J. Bender ² , and J. Jacob ¹ , ¹ <i>University of Minnesota, St. Paul</i> , ² <i>University of Minnesota, St. Paul.</i>
8:30 AM	133	California's poultry health inspection program. F. Bradley* and C. Cardona, <i>University of California, Davis.</i>
8:45 AM	134	Survey of California's poultry health inspectors. A. Robinson* and F. Bradley, <i>University of California, Davis.</i>
9:00 AM	135	A tool for training 4-H poultry judging teams - An interactive CD-ROM. J. Jacob*, <i>University of Minnesota, St. Paul.</i>
9:15 AM	136	Percentage of undergraduate students involved in youth poultry programs in Texas. J. Butler* and J. Carey, <i>Texas A&M University, College Station.</i>

9:30 AM	137	Youth turkey show in North Carolina. G.S. Davis*, C.R. Parkhurst, and J.L. Grimes, <i>North Carolina State University, Raleigh.</i>
9:45 AM	138	The virtual chicken: Part 1 - The female reproductive tract. P. Curtis*, W. Berry, R. Lien, M. Kloeppe, and B. Kuerten, <i>Auburn University, Auburn, Alabama.</i>
10:00 AM		Break.
10:15 AM	139	Experiences in inquiry-based learning in an introductory animal science class: Science answers to questions you didn't know you had about animal agriculture. F. Robinson*, B. Wuetherick, C. Strawson, S. Greenwood, N. Wolanski, and K. Schmid, <i>University of Alberta, Edmonton, AB, Canada.</i>
10:30 AM	140	Recruiting animal and poultry science students on campus: Providing experiential opportunities to benefit both urban and rural students. F. Robinson*, B. Wuetherick, C. Strawson, N. Wolanski, S. Greenwood, and K. Schmid, <i>University of Alberta, Edmonton, AB, Canada.</i>
10:45 AM	141	Recruiting poultry science majors through the high school FFA Poultry Career Development Event program. R. Lien*, F. Dillman, J. Hess, and R. Voitle, <i>Auburn University, Auburn, Alabama.</i>
11:00 AM	142	Maximizing recruiting results through a prospective student database and strategic personal contacts. F. Dillman* and R. Lien, <i>Auburn University, Auburn, Alabama.</i>
11:15 AM	143	Understanding and recruiting the high school student. W. Krueger*, A. Sams, C. Creger, J. Daniels, and J. Lee, <i>Texas A&M University, College Station.</i>
11:30 AM	144	Undergraduate recruiting at Texas A&M University. J.T. Lee* and A.R. Sams, <i>Texas A&M University, College Station.</i>
11:45 AM	145	Recruiting poultry science students through on-campus experiential learning events. G. Davis*, J. Emmert, K. Eskew, and C. Owens, <i>University of Arkansas, Fayetteville.</i>

Nutrition Energy and Feed Ingredients Chair: C. Novak , Virginia Tech Ballroom A, Left		
8:00 AM	146	Evaluation of limit feeding low-energy diets for a non-feed withdrawal laying hen molt program. P. Utterback*, P. Biggs, C. Martinez, E. Kim, K. Koelkebeck, and C. Parsons, <i>University of Illinois, Urbana.</i>
8:15 AM	147	Dietary metabolizable energy needs of heavy broilers. W.A. Dozier, III* ¹ , C.J. Price ² , M.T. Kidd ³ , A. Corzo ³ , and S.L. Branton ¹ , ¹ <i>USDA-ARS Poultry Research Unit, Mississippi State, Mississippi</i> , ² <i>Sanderson Farms, Laurel, Mississippi</i> , ³ <i>Mississippi State University, Mississippi State.</i>
8:30 AM	148	Determination of the metabolisable energy of sweet potato tuber meal and its utilization by growing pullets. O. Ladokun* ¹ , F. Aderemi ² , and O. Tewe ¹ , ¹ <i>University of Ibadan, Ibadan, Oyo State, Nigeria</i> , ² <i>Bowen University, Iwo, Osun State, Nigeria</i> , ³ <i>University of Ibadan, Ibadan, Oyo State, Nigeria.</i>
8:45 AM	149	Phosphorus availability of distiller's dried grains with solubles: Variation in color.

		J.L. Kalbfleisch* and K.D. Roberson, <i>Michigan State University, East Lansing.</i>
9:00 AM	150	Nutritional characteristics of corn distillers dried grain with solubles produced by different processing techniques. C. Martinez*, C.M. Parsons, and V. Singh, <i>University of Illinois, Urbana.</i>
9:15 AM	151	The effect of oligosaccharides on growth performance, nutrient utilization, and cecal microbes in young chicks. P. Biggs* and C. Parsons, <i>University of Illinois, Urbana.</i>
9:30 AM	152	Microbial community analysis of the turkey duodenum by polymerase chain reaction and denaturing gradient gel electrophoresis. K. Huffman*, Z. Yu, M. Morrison, and M. S. Lilburn, <i>The MAPLE Research Initiative, The Ohio State University, Columbus.</i>
9:45 AM	153	Effects of fat and inclusion of fiber on nutrient utilization and digestive traits of broilers. J.M. González-Alvarado, A. González-Serrano, E. Jiménez-Moreno, R. Lázaro*, and G.G. Mateos, <i>Universidad Politécnica de Madrid, Madrid, Spain.</i>
10:00 AM		Break.
10:15 AM	154	Influence of type of cereal, heat processing of the cereal, and inclusion of fiber in the diet on digestibility of nutrients in broilers. E. Jiménez-Moreno, J.M. González-Alvarado, R. Lázaro, and G.G. Mateos*, <i>Universidad Politécnica de Madrid, Madrid, Spain.</i>
10:30 AM	155	Field observation: Trypsin inhibitors in soybean meal are correlated with outbreaks of feed passage in broilers. N. Ruiz* ¹ and F. de Belalcázar ² , ¹ <i>ContiGroup Companies, Inc., New York, New York,</i> ² <i>Nutriandlisis, Bogotá, Colombia, South America.</i>
10:45 AM	156	A comparison of TAAD for soybean meal and meat meal samples determined in two laboratories using the adult rooster assay and estimated using the IDEA <i>in-vitro</i> technique. L. Campbell* ¹ , C. Parsons ² , S. Peak ³ , A. Golian ¹ , C. Schasteen ³ , and M. Nyachoti ¹ , ¹ <i>The University of Manitoba, Winnipeg, MB, Canada,</i> ² <i>The University of Illinois, Urbana,</i> ³ <i>Novus International Inc., St. Charles, Missouri.</i>
11:00 AM	157	Performance of broilers fed diets formulated in a corn-soybean meal all vegetable basis added with carbohydrases or having animal by-products, with or without antibiotic growth promoter. R. Ott, S. Vieira*, and O. Conde, <i>Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil.</i>
11:15 AM	158	Organic and inorganic acids added to feed and water affect live performance and water intake of broilers fed without antibiotic growth promoters or anticoccidials. S. Vieira*, E. Viola, O. Conde, and J. Berres, <i>Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil.</i>
11:30 AM	159	Analysis of mucosa-associated and luminal bacteria in chicken intestine following feeding dietary additives. Z. Uni*, A. Smirnov, and R. Perez, <i>Hebrew University, Rehovot, Israel.</i>
11:45 AM	160	Maternal dietary fatty acids alter the retention of long chain n-3 fatty acids in the cardiac and hepatic tissue of growing chickens. G. Cherian* and M.P. Goeger, <i>Oregon State University, Corvallis.</i>

Pathology

Pathology I
Chair: R. Porter, University of Wisconsin
Governor

8:00 AM	161	Ionophore toxicosis in White Leghorn pullets. R. Porter* ^{1,2} , D. Zoromski ¹ , and J. Brown ³ , ¹ Wisconsin Veterinary Diagnostic Laboratory, Madison, Wisconsin, ² University of Wisconsin School of Veterinary Medicine, Department of Pathobiological Sciences, Madison, ³ Centurion Poultry, Inc., Lexington, Georgia.
8:15 AM	162	Myopathy in turkeys: Are the mechanisms similar to those in broilers and pigs? Effects of halothane. M. Mitchell* ¹ , L. Gatcliffe ² , and D. Sandercock ¹ , ¹ Roslin Institute, Roslin, Midlothian, United Kingdom, ² BUT, Broughton, Chester, United Kingdom.
8:30 AM	163	Bacteriology of ascites in broilers. Y. Vizzier Thaxton*, M. Putsakum, and S. Anderson, <i>Mississippi State University, Mississippi State.</i>
8:45 AM	164	Dynamics of duodenal and ileal microbial ecology in chickens vaccinated and challenged with mixed <i>Eimeria</i> spp.. E.O. Oviedo-Rondón ^{1,2} , M.E. Hume* ³ , and S. Clemente-Hernández ^{1,4} , ¹ Stephen F. Austin State University, Nacogdoches, Texas, ² North Carolina State University, Raleigh, ³ USDA, ARS, Southern Plains Agricultural Research Center, College Station, Texas, ⁴ Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México.
9:00 AM	165	Prophylactic effects of orally administered CpG-ODNs during clinical challenge with <i>Eimeria acervulina</i> and <i>E. tenella</i>. K. Ameiss* ¹ , J. El-Attrache ¹ , H. Danforth ² , A. McElroy ³ , and D. Caldwell ¹ , ¹ Texas A&M University, College Station, ² USDA/ARS, Beltsville, Maryland, ³ Virginia Polytechnic Institute and State University, Blacksburg.
9:15 AM	166	Effects of F-strain <i>Mycoplasma gallisepticum</i> inoculation at twelve or twenty two weeks of age and diet supplementation on blood characteristics of commercial layers. S. Park ¹ , E. Peebles* ¹ , S. Branton ² , M. Kidd ¹ , S. Whitmarsh ¹ , and P. Gerard ¹ , ¹ Mississippi State University, Mississippi State, ² USDA-ARS, Poultry Research Unit, Mississippi State, Mississippi.
9:30 AM	167	Effects of F-strain <i>Mycoplasma gallisepticum</i> inoculation at twelve or twenty two weeks of age and diet supplementation on egg yolk characteristics of commercial layers. S. Park ¹ , E. Peebles* ¹ , S. Branton ² , M. Kidd ¹ , S. Whitmarsh ¹ , and P. Gerard ¹ , ¹ Mississippi State University, Mississippi State, ² USDA, ARS, Poultry Research Unit, Mississippi State, Mississippi.
9:45 AM	168	Molecular dating of the epidemiological events in relation to the emergence of very virulent infectious Bursal Disease Virus. C.-C. Hon* ¹ , Y.-F. Lee ² , W.-K. Ching ² , K.-P. Ng ² , T.-W. Ng ² , and F. C. Leung ¹ , ¹ The University of Hong Kong, Hong Kong, HK-SAR, China, ² The University of Hong Kong, Hong Kong, HK-SAR, China.
10:00 AM		Break.
10:15 AM	169	Effect of dietary protein level on broiler performance and lesion development during vaccination and following field strain <i>Eimeria</i> challenge. J.T. Lee* ¹ , N. Eckert ¹ , K. Ameiss ¹ , S. Stevens ¹ , P. Anderson ¹ , A.P. McElroy ² , H.D. Danforth ³ , and D.J. Caldwell ¹ , ¹ Texas A&M University, College Station, ² Virginia Tech, Blacksburg, ³ USDA-ARS, Beltsville, Maryland.
10:30 AM	170	Novel staining method to enhance visualization of the chicken Peyer's patch <i>in situ</i>. L. Vaughn*, P. Holt, and R. Moore, <i>USDA, ARS, ESQ, Athens, Georgia.</i>

Physiology Physiology III Chair: J. Orban, Southern University of Shreveport Meeting Room I		
8:00 AM	171	Distribution of serotonergic neurons and fibers and interaction with dopaminergic neurons in the turkey hypothalamus and brainstem. S. Kang*, O. Youngren, T. Bakken, and M. El Halawani, <i>University of Minnesota, St. Paul.</i>
8:15 AM	172	The role of retinal and extra-retinal photoreceptors in reproductive activities of broiler breeder hens. I. Rozenboim*, N. Mobarkey, O. Oshpiz, N. Avital, and R. Heiblum, <i>Hebrew University of Jerusalem, Rehovot, Israel.</i>
8:30 AM	173	Cloning of Smad 1, Smad5 and Smad8 from the chicken ovary and characterization of their expression during chicken ovarian development. J. Li*, Y-J. Wang, C-C. Hon, and F.C. Leung, <i>The University of Hong Kong, Hong Kong, HK-SAR, China.</i>
8:45 AM	174	Cloning of chicken pre-B-cell colony-enhancing factor 1 (PBEF1) and characterization of its spatial expression. J. Li*, Y-J Wang, and F.C. Leung, <i>The University of Hong Kong, Hong Kong, HK-SAR, China.</i>
9:00 AM	175	Development of the small intestinal epithelial barrier function in broiler chicks. S. Roberts*, M. Perez-Garcia, M. Neal, and K. Bregendahl, <i>Iowa State University, Ames.</i>
9:15 AM	176	Role of glutamate receptor in food intake regulation in chickens. D.M. Denbow* and J. Showalter, <i>Virginia Tech, Blacksburg.</i>

POSTER PRESENTATIONS

Poster Session - Tuesday, (Presenters must be present from 9:30AM - 11:30AM) Chair: M.J. Wineland, North Carolina State University Ballroom B, Left and Right	
T1	Effect of naked neck and frizzle genes on immunocompetence of chickens. M.M. Fathi, A. Galal*, S.A. El-Safty, and S.A. Abdel-Fattah, <i>Ain Shams University, Cairo, Egypt.</i>
T2	Innate immune functional comparison of wild-type turkeys to commercial turkey lines. K. Genovese* ¹ , H. He ¹ , V. Lowry ² , C. Swaggerty ¹ , D. Nisbet ¹ , and M. Kogut ¹ , ¹ <i>USDA-ARS, SPARC, College Station, Texas,</i> ² <i>Texas A&M University, College Station.</i>
T3	Effect of laying hen age on antibody deposition in egg yolk. D. Trott*, M. Yang, and M. Cook, <i>University of Wisconsin, Madison.</i>
T4	With betaine and exogenous enzymes towards improved intestinal health and immunity, and better performance of broiler chicks. H. Kettunen* and N. Rautonen, <i>Danisco Sugar Ltd., Kantvik, Finland.</i>
T5	Behavioral response of broilers to competition with different feeder sizes and locations. E.H. Leone* ¹ , I. Estevez ¹ , and M.C. Christman ² , ¹ <i>University of Maryland, College Park,</i> ² <i>University of Florida, Gainesville.</i>
T6	Natural "anti-Gal" and salmonella specific antibodies in bile from diet efficient hens.

	P. Cotter* and E. Van Eerden, <i>Wageningen University, Wageningen, Netherlands.</i>
T7	The use of polymerase chain reaction to detect different <i>Salmonella</i> serotypes. P.N. Anderson* ¹ , M.E. Hume ² , J.A. Byrd ² , and D.J. Caldwell ¹ , ¹ <i>Texas A&M University, College Station,</i> ² <i>USDA/ARS/SPARC, College Station, Texas.</i>
T8	Acquisition of immunity to <i>Eimeria maxima</i> in newly hatched chickens given 100 oocysts. H.D. Chapman, V.K. Muthavarapu*, P.L. Matsler, and M.E. Chapman, <i>University of Arkansas, Fayetteville.</i>
T9	Oral administration of egg yolk antibodies in layer chicks to limit an experimental infection by <i>Salmonella</i> Typhimurium. P. Herrera ¹ , S. Ricke ¹ , L. Fang ² , R. Marquardt ² , J. McReynolds ³ , L. Kubena* ³ , D. Nisbet ³ , and J. Byrd ³ , ¹ <i>Texas A&M University, College Station,</i> ² <i>University of Manitoba, Winnipeg, MB, Canada,</i> ³ <i>USDA-ARS, College Station, Texas.</i>
T10	Effects of continuous or intermittent drinking water application of a <i>Lactobacillus</i>-based probiotic on broiler performance. N. Eckert*, J. Lee, S. Stevens, K. Ameiss, S. Anderson, P. Anderson, A. Barri, D. Hyatt, and D. Caldwell, <i>Texas A&M University, College Station.</i>
T11	Effects of over feeding on sexual maturation and egg production in 8 strains of broiler breeder hens. M.E. Rustad* ¹ , F.E. Robinson ¹ , R.A. Renema ¹ , M.J. Zuidhof ² , and V.L. Carney ² , ¹ <i>University of Alberta, Edmonton, AB, Canada,</i> ² <i>Alberta Agriculture, Food and Rural Development, Edmonton, AB, Canada,</i> ³ <i>Aviagen, Huntsville, Alabama.</i>
T12	Dynamics of duodenal and ileal microbial ecology in chickens fed diets supplemented with essential oils and challenged with mixed <i>Eimeria</i> spp. S. Clemente-Hernández* ^{1,2} , M.E. Hume ³ , F. Salvador ² , and E.O. Oviedo-Rondón ^{1,4} , ¹ <i>Stephen F. Austin State University, Nacogdoches, Texas,</i> ² <i>Universidad Autónoma de Chihuahua, Chihuahua, Chihuahua, México,</i> ³ <i>USDA, ARS, Southern Plains Agricultural Research Center, College Station, Texas,</i> ⁴ <i>North Carolina State University, Raleigh.</i>
T13	Effect of group size and housing density on behavior and stress responses in broilers. T. Han*, E.H. Leone, I. Estevez, and B.D. Humphrey, <i>University of Maryland, College Park.</i>
T14	Additional loci for endogenous retroviral elements in the guinea fowl. S. Nahashon, I. Patterson-Brooks*, A. Amenyenu, and N. Adefope, <i>Tennessee State University, Nashville.</i>
T15	Effect of selection for four-week body weight on egg production and incidence of thin-shelled eggs in Japanese Quail. S. Saini*, G.S. Brah, and M.L. Chaudhary, <i>Punjab Agricultural University, Ludhiana, Punjab, India.</i>
T16	Egg quality and composition of a selected and control line of Japanese Quail. S. Saini*, G.S. Brah, and M.L. Chaudhary, <i>Punjab Agricultural University, Ludhiana, Punjab, India.</i>
T17	Variation in residual feed intake and its association with other production traits in meat-type birds. S. Aggrey*, <i>University of Georgia, Athens.</i>
T18	Identification of candidate genes at quantitative trait loci on chicken Chromosome Z using orthologous comparison of chicken, mouse, and human genomes. G. Ankra-Badu* and S. Aggrey, <i>University of Georgia, Athens.</i>
T19	Influences of dietary energy and protein levelson performance of Hyline W-36 hens in phase I. G. Wu*, M.M. Bryant, and D.A. Roland, <i>Auburn University, Auburn, Alabama.</i>
T20	Influences of dietary energy and Tylan[®] on performance, egg composition, and egg quality in Bovans White and Dekalb White in phase II. G. Wu*, M.M. Bryant, R.A. Voitle, and D.A. Roland, <i>Auburn University, Auburn, Alabama.</i>
T21	Evaluation of mung bean seeds (<i>phaseolus aureus</i>) as a promising legume in quail diets.

	A. Abouzeid* ¹ , N. Isshak ² , N. Badway ² , and Y. Maricy ² , ¹ Tanta University, Tanta, Egypt, ² College of Kafr-EL-Sheikh, Tanta, Egypt.
T22	In ovo feeding of linoleic acid to chicks. A.A. Pedroso*, J.H. Stringhini, N.M. Leandro, M.B. Café, F.G. Lima, V.T. Barbosa, and C.E. Barbosa, <i>University of Goiás, Goiânia, Goiás, Brasil.</i>
T23	Effective use of shochu distillery by-product as a feed additive in broilers. K. Kitahara* ¹ , K. Hayashi ¹ , A. Ohtsuka ¹ , and R. Yoshizaki ² , ¹ Kagoshima University, Kagoshima, Japan, ² Nosan Corporation, Yokohama, Japan.
T24	Dietary L-carnitine responses in broiler diets. J.M. Gilbert* ¹ , A. Corzo ¹ , C.M. Page ¹ , J.C. Woodworth ² , and M.T. Kidd ¹ , ¹ Mississippi State University, Mississippi State, ² Lonza Incorporated, Allendale, New Jersey.
T25	Microbial phytase and citric acid increase P availability in corn distillers dried grains with solubles (DDGS) for chicks. C. Martinez*, C.M. Parsons, and D.H. Baker, <i>University of Illinois, Urbana.</i>
T26	Nutrient reductions in broiler diets supplemented with phytase. F. Santos* ¹ , N.K. Sakomura ¹ , M. Hruby ² , E.E.M. Pierson ³ , J.C. Remus ³ , and J.S. Sands ² , ¹ Universidade Estadual Paulista, Jaboticabal, São Paulo, Brazil, ² Danisco Animal Nutrition, Marlborough, Wiltshire, United Kingdom, ³ Danisco Animal Nutrition, St. Louis, Missouri.
T27	Effect of commercial White Leghorn strain on hen performance parameters and egg yield. X. Sun* and C. Novak, <i>Virginia Tech, Blacksburg.</i>
T28	Evaluation of Xtract™ on broiler performance and carcass yields when used in corn/soybean meal diets. O. Gutierrez* ¹ , A. Haq ¹ , J. Corley ² , C. Kamel ³ , and C. Bailey ¹ , ¹ Texas A&M University, College Station, ² Prince Agri Products, Inc., Quincy, Illinois, ³ AXISS France SAS, Bellegarde-sur-Valserine, France.
T29	Glycogen status of turkeys in ovo fed solutions containing beta-hydroxy-beta-methylbutyrate (HMB), protein and carbohydrates. J. de Oliveira* ¹ , P. Ferket ¹ , Z. Uni ² , and J. Warner ² , ¹ North Carolina State University, Raleigh, ² Hebrew University of Jerusalem, Israel.
T30	The effect of feed restriction programs on body weight, frame size, flock uniformity and <i>in vitro</i> lipogenesis of broiler breeder hens. M. de Beer* and C.N. Coon, <i>University of Arkansas, Fayetteville.</i>
T31	The impact of adding wheat middlings and citric acid to a traditional corn-soybean meal diet on growth performance. T. O'Connor-Dennie* and J. Emmert, <i>University of Arkansas, Fayetteville.</i>
T32	Production of nuclear transferred gonadal germ cells (GGCs) after cryopreservation. Y. Kohara*, A. Tajima, and Y. Kanai, <i>University of Tsukuba, Tsukuba, Ibaraki, Japan.</i>
T33	Differential expression of proteins in lymphocytes of low and high feed efficient male broilers. K. Lassiter* ¹ , N. Pumford ¹ , C. Ojano-Dirain ¹ , J. Lay ¹ , W. Bottje ¹ , T. Wing ² , and M. Cooper ² , ¹ University of Arkansas, Fayetteville, ² Cobb-Vantress Inc., Siloam Springs, Arkansas.
T34	The influence of copper concentration and source on <i>Lactobacilli</i> and <i>E. coli</i> populations in batch cultures inoculated with chicken ileal contents. Y. Pang*, J. Patterson, and T. Applegate, <i>Purdue University, West Lafayette, Indiana.</i>
T35	Hepatic betaine-homocysteine methyltransferase and serine hydroxymethyltransferase activities in chick embryos and hatched chicks. J. Lu* and C.N. Coon, <i>University of Arkansas, Fayetteville.</i>
T36	Activity of 3β-HSD in granulosa cells treated <i>in vitro</i> with LH FSH PRI or a combination

	H. Taira* and M.M. Beck, <i>University of Nebraska, Lincoln.</i>
T37	Reactivity of commercial anti-<i>Campylobacter</i> antibodies measured by enzyme-linked immunoabsorbent assay. D. Wei*, T.S. Huang, A.L. Simonian, S. Sista, and O.A. Oyarzabal, <i>Auburn University, Auburn, Alabama.</i>
T38	Effects of carbon dioxide and carbonate on lysozyme activity in chicken eggs. K.E. McCormick, K.H. Sauer*, and K.M. Keener, <i>North Carolina State University, Raleigh.</i>
T39	The role of poultry meat export in dynamics of the developing countries: Iran's status in the Middle East region. F. Mirzaei* ¹ , S. Yazdani ^{1,2} , and M. Mostafavi ¹ , ¹ <i>Animal Science Research Institute, Karaj, Tehran, Iran,</i> ² <i>Tehran University, Karaj, Tehran, Iran.</i>
T40	Influence of dietary seaweeds and sardine oil on egg lipid content, cholesterol content and fatty acid composition. D.S. Carrillo* ¹ , R.E. López ¹ , V.M. Casas ² , D.R.M. Castillo ¹ , G.E. Avila ³ , and R.F. Pérez-Gil ¹ , ¹ <i>Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán, México, D.F. Mexico,</i> ² <i>Centro Interdisciplinario de Ciencias Marinas, La Paz, Baja California Sur, Mexico,</i> ³ <i>Facultad de Medicina Veterinaria y Zootecnia, UNAM, México D.F., Mexico.</i>
T41	The effect of molting and pre- and post-molt diets high in omega-3 fatty acids on the skeletal integrity of White Leghorns. H. Mazzuco* ^{1,3} and P. Hester ¹ , ¹ <i>Purdue University, West Lafayette, Indiana,</i> ² <i>CNPQ, Brasilia, DF, Brazil,</i> ³ <i>EMBRAPA Swine and Poultry, Concordia, SC, Brazil.</i>
T42	N-Nitro-L-Arginine Methyl Ester (L-NAME) amplifies the pulmonary hypertensive response to micro-particle injections in broilers. R. Wideman*, G. Erf, and M. Chapman, <i>University of Arkansas, Fayetteville.</i>
T43	Expression of the proglucagon and companion receptor genes in chickens. M. Richards*, S. Poch, and J. McMurtry, <i>USDA, ARS, Growth Biology Laboratory, Beltsville, Maryland.</i>
T44	Identification and characterization of the AMP-activated protein kinase pathway in chickens. M. Proszkowiec-Weglarz* and M. Richards, <i>USDA, ARS, Growth Biology Laboratory, Beltsville, Maryland.</i>
T45	Heat production of broiler embryos varies by hen age and line. V. Christensen* ¹ , M.J. Wineland ¹ , W.J. Croom ¹ , K. Milholand ² , N. French ² , L. Daniel ¹ , and D. Ort ¹ , ¹ <i>North Carolina State University, Raleigh,</i> ² <i>Hubbard Breeders, Statesville.</i>
T46	Chelated calcium supplementation to commercial turkey breeder flock improves eggshell quality and embryo survival. V. Christensen* ¹ , L.G. Bagley ² , D.T. Ort ¹ , J.L. Grimes ¹ , and R.W. Rowland ³ , ¹ <i>North Carolina State University, Raleigh,</i> ² <i>Moroni Turkey Hatchery, Moroni, Utah,</i> ³ <i>Chelated Minerals Corporation, Salt Lake City, Utah.</i>
T47	Tissue accumulation and metabolism of gossypol isomers in hens. M. Lordelo* ¹ , A. Davis ¹ , M. Calhoun ² , and N. Dale ¹ , ¹ <i>University of Georgia, Athens,</i> ² <i>Texas A&M University, San Angelo.</i>
T48	Comparison of the ability of the three gonadotropin releasing hormones (GnRH) to stimulate release of follicle stimulating hormone (FSH) and luteinizing hormone (LH) in chickens. J. Proudman* ¹ , C. Scanes ^{2,5} , S. Johannsen ² , L. Berghman ³ , M. Camp ¹ , W.H. Yu ⁴ , and S. McCann ⁴ , ¹ <i>USDA-ARS, Beltsville, Maryland,</i> ² <i>Iowa State University, Ames,</i> ³ <i>Texas A&M University, College Station,</i> ⁴ <i>Louisiana State University, Baton Rouge,</i> ⁵ <i>Mississippi State University, Mississippi State.</i>
T49	Developmental changes of hepatic free amino acid concentrations involved in methionine metabolism in chick embryos and hatched chicks. J. Lu* and C.N. Coon, <i>University of Arkansas, Fayetteville.</i>

T50	Broiler carcass bacterial counts after immersion chilling using either a low or high volume of water. J.K. Northcutt* ¹ , D.P. Smith ¹ , J.A. Cason ¹ , R.J. Buhr ¹ , and D.L. Fletcher ² , ¹ USDA-ARS, Russell Research Center, Athens, Georgia, ² University of Georgia, Athens.
T51	The occurrence of deep pectoral myopathy in roaster chickens. M. Bianchi, M. Petracci, C. Cavani, and A. Franchini*, <i>University of Bologna, Bologna, Italy.</i>
T52	Ultraviolet-filtered lighting and film oxygen barrier property effects on color stability of vacuum-packaged turkey pepperoni. S. Kartika, P.L. Dawson, and J.C. Acton*, <i>Clemson University, Clemson, South Carolina.</i>
T53	Sensory acceptability of eggs high in omega-3 polyunsaturated fatty acids resulting from feeding flax and canola oils. N.P. Johnston*, O.A. Pike, L. Jeffries, J. Campos, and G. Aduviri, <i>Brigham Young University, Provo, Utah.</i>
T54	A comparison of broiler and egg prices to other foods and commodities between 1947 and 2004. D.L. Fletcher*, <i>University of Georgia, Athens.</i>
T55	Effects of antemortem wing flapping on the quality of broiler Pectoralis major (fillet) and Pectoralis minor (tender) muscles. D.L. Fletcher* ¹ and R.J. Buhr ² , ¹ University of Georgia, Athens, ² USDA-ARS, Russell Research Center, Athens, Georgia.
T56	Effect of supplemented head shrimp meal (10-25%) on productive parameters of laying hens and physical quality of fresh and stored eggs. M.E. Carranco* ¹ , S. Carrillo ¹ , L. Sanginés ¹ , E. Morales ² , E. Avila ¹ , B. Fuente ¹ , and F. Pérez-Gil ¹ , ¹ Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán, México, D.F. Mexico, ² Universidad Autónoma Metropolitana-X, México, D.F. Mexico.
T57	Effect of different varieties of corn on endogenous energy losses in roosters. S. Zhai* ^{1,2} , G. Qi ¹ , and F. Liu ² , ¹ Chinese Academy of Agriculture Science, Beijing, China, ² University of Agriculture and Forestry, Yangling Shaanxi, China.
T58	Changes in nitrogen and soluble reactive phosphorus contents of broiler litter due to applying two different litter additives. K. Nahm*, <i>Taegu University, Gyong San, South Korea.</i>
T59	Incubation period of White Leghorn eggs as influenced by line, sex and storage period. G. Brah* and M.L. Chaudhary, <i>Punjab Agricultural University, Ludhiana, India.</i>
T60	Incubation period of White Leghorn eggs as influenced by line, sex and storage period. G.S. Brah* and M.L. Chaudhary, <i>Punjab Agricultural University, Ludhiana, Punjab, India.</i>

SYMPOSIA AND ORAL SESSIONS

WPSA Lectureship Chair: G. Havenstein, North Carolina State University Auditorium	
1:00 PM	Integrative poultry biology: Merging approaches from population studies to the genome sequence. M. Tixier-Boichard*, <i>IUMR INRA/INA P-G, Genetique et Diversite Animales, France.</i>

Wednesday, August 3

SYMPOSIA AND ORAL SESSIONS

Processing and Products Eggs and Antibiotic Resistance Chair: R.J. Buhr, USAD-ARS, RRC Meeting Room I		
7:45 AM	177	Impact of strain on environmental and fecal microbial load and <i>Salmonella</i> prevalence during a single production cycle. K.E. Anderson* ¹ , L.K. Kerth ² , V. Kretzschmar-McCluskey ² , and P.A. Curtis ² , ¹ North Carolina State University, Raleigh, ² Auburn University, Auburn, Alabama.
8:00 AM	178	Influence of hen age on shell egg exterior, interior, and contents microflora and <i>Salmonella</i> prevalence during a single production cycle. V. Kretzschmar-McCluskey* ¹ , K.E. Anderson ² , P.A. Curtis ¹ , and L.K. Kerth ¹ , ¹ Auburn University, Auburn, Alabama, ² North Carolina State University, Raleigh.
8:15 AM	179	Recovery of <i>Salmonella</i> from nest run egg cart shelves. M.T. Musgrove* and D.R. Jones, USDA-ARS, Russell Research Center, Athens, Georgia.
8:30 AM	180	Effects of cool water washing of shell eggs on interior quality. A.B. Caudill* ¹ , P.A. Curtis ¹ , D.R. Jones ² , M.T. Musgrove ² , K.E. Anderson ³ , and O. A. Oyarzabal ¹ , ¹ Auburn University, Auburn, Alabama, ² USDA-ARS Russell Research Center, Athens, Georgia, ³ North Carolina State University, Raleigh.
8:45 AM	181	Effect of egg refrigeration on the <i>in vitro</i> penetration of <i>Salmonella enteritidis</i> through the yolk membrane. R.K. Gast* and P.S. Holt, USDA-ARS, Russell Research Center, Athens, Georgia.
9:00 AM	182	The correlation of eggshell strength and <i>Salmonella</i> Enteritidis growth in commercial shell eggs. D.R. Jones* and M.T. Musgrove, USDA-ARS, Russell Research Center, Athens, Georgia.
9:15 AM	183	The effect of cooking temperatures on the destruction of <i>Salmonella</i> in eggs. A.L. Davis*, P.A. Curtis, and D.E. Conner, Auburn University, Auburn, Alabama.
9:30 AM	184	Impact of white and brown-egg layer strains on egg quality, and size distribution during a single production cycle. K.E. Anderson* ¹ , L.K. Kerth ² , V. Kretzschmar-McCluskey ² , and P.A. Curtis ² , ¹ North Carolina State University, Raleigh, ² Auburn University, Auburn, Alabama.
9:45 AM	185	Effect of layer hen strain on egg weights and solids during a single production cycle. L.K. Kerth* ¹ , P.A. Curtis ¹ , and K.E. Anderson ² , ¹ Auburn University, Auburn, Alabama, ² North Carolina State University, Raleigh.
10:00 AM		Break.
10:15 AM	186	Layer strain impact on functional properties of eggs during a single production cycle. L.K. Kerth* ¹ , P.A. Curtis ¹ , and K.E. Anderson ² , ¹ Auburn University, Auburn, Alabama, ² North Carolina State University, Raleigh.
10:30 AM	187	Impact of strain on egg quality and composition during a single production cycle. P.A. Curtis* ¹ , L.K. Kerth ¹ , and K.E. Anderson ² , ¹ Auburn University, Auburn, Alabama, ² North Carolina State University, Raleigh.
10:45 AM	188	The impact of layer dietary threonine levels on egg yield, composition, and

		functionality. P.L. Niemeyer*, C.D. Coufal, and J.B. Carey, <i>Texas A&M University, College Station.</i>
11:00 AM	189	Presence of antibiotic resistant <i>Salmonella</i> in commercially raised organic chicken. J.A. deGraft-Hanson*, T.A. Littler, A. Bhumbra, and A. Nakamura, <i>West Virginia University, Morgantown.</i>
11:15 AM	190	Prevalence and antibiotic resistant profiles of <i>Salmonella</i> from fresh retail chicken. J.A. deGraft-Hanson*, T.A. Littler, A. Bhumbra, and A. Nakamura, <i>West Virginia University, Morgantown.</i>
11:30 AM	191	Antibiotic-resistant bacteria on broiler carcasses raised in small flock production systems without routine antibiotics. J.P. Griggs* ¹ , J.B. Bender ² , and J.P. Jacob ¹ , ¹ <i>University of Minnesota, St. Paul</i> , ² <i>University of Minnesota, St. Paul.</i>
11:45 AM	192	Integrating food safety and food security into highly effective operating system; theory and practice from poultry operations and mass feeding systems. G. Zeidler*, <i>University of California, Riverside.</i>

Environment and Management Layers, Turkeys, Waterfowl Chair: A.B. Webster, University of Georgia Auditorium		
8:00 AM	193	Acclimation of laying hens to new environments. J. Thaxton* and J. Odhiambo-Mumma, <i>Mississippi State University, Mississippi State.</i>
8:15 AM	194	Determining protein and energy levels needed for full fed molting procedures. P. Ruzsler* and C. Novak, <i>Virginia Polytechnic Institute and State University, Blacksburg.</i>
8:30 AM	195	Effects of feeding grains naturally contaminated with <i>Fusarium</i> mycotoxins on hepatic fractional protein synthesis rates of laying hens. S. Chowdhury* and T. Smith, <i>University of Guelph, Guelph, ON, Canada.</i>
8:45 AM	196	Effect of dietary phosphorus concentration on nutrient mass balance of laying hens. T. Applegate* ¹ , W. Powers ² , P. Jaynes ¹ , A. Storm ¹ , and M. Jeffrey ² , ¹ <i>Purdue University, West Lafayette, Indiana</i> , ² <i>Iowa State University, Ames.</i>
9:00 AM	197	Effects of chronic social stress on immune function, production and feather condition of three genetic strains of leghorn hens at 45 weeks of age. A.G. Fahey* ^{1,2} , R.M. Marchant-Forde ¹ , H.W. Cheng ¹ , and W.M. Muir ² , ¹ <i>USDA-ARS, West Lafayette, Indiana</i> , ² <i>Purdue University, West Lafayette, Indiana.</i>
9:15 AM	198	Behavioral assessment of efficiency of hens housed at different stocking densities. S.J. Shields*, S.E. Scheideler, E.E. Blankenship, L. Robeson, and M.M. Beck, <i>University of Nebraska, Lincoln.</i>
9:30 AM	199	Effects of fluoride fed during growth on bone strength of caged laying hens. A.B. Webster* ¹ , R.J. Buhr ² , N.M. Dale ¹ , and R.M. Jardim ³ , ¹ <i>University of Georgia, Athens</i> , ² <i>USDA ARS Russell Research Center, Athens, Georgia</i> , ³ <i>Federal University of Goias, Goias, Brazil.</i>
9:45 AM	200	Performance of turkey toms and hens fed diets supplemented with mannan oligosaccharides. R.M. Hulet* and T.L. Cravener, <i>The Pennsylvania State University, University Park.</i>
10:00 AM		Break.

10:15 AM	201	Turkey toms fed low calcium and phosphorus diets supplemented with phytase 1. Growth performance and carcass yield. R.M. Hulet* ¹ , P.H. Patterson ¹ , R.J. Mitchell ² , and T.L. Cravener ¹ , ¹ <i>The Pennsylvania State University, University Park</i> , ² <i>Mitchell Consulting Service, Tega Cay, South Carolina</i> .
10:30 AM	202	Turkey toms fed low calcium, phosphorus diets supplemented with phytase 2. Impact on litter mass, phosphorus, bone mineral density and feed costs. P.H. Patterson* ¹ , R.M. Hulet ¹ , R.J. Mitchell ² , and T.L. Cravener ¹ , ¹ <i>The Pennsylvania State University, University Park</i> , ² <i>Mitchell Consulting Service, Tega Cay, South Carolina</i> .
10:45 AM	203	Effect of feeding time on the reproductive performance of Pharaoh quail and Pekin duck. M. Petek*, <i>University of Uludag, Bursa, Turkey</i> .
11:00 AM	204	Comparative histology of duck bills following different bill trimming practices. H.W. Cheng* ¹ , L. Gustafson ² , E.A. Pajor ³ , and J.A. Mench ² , ¹ <i>USDA-ARS, West Lafayette, Indiana</i> , ² <i>University of California, Davis</i> , ³ <i>Purdue University, West Lafayette, Indiana</i> .

Nutrition Enzymes Chair: C. Fritts, Cobb-Vantress, Inc. Ballroom A, Left		
8:00 AM	205	Effect of β-Mannanase (Hemicell[®]) on performance and body weight uniformity in broiler chickens provided with corn-soybean meal diets and economic ramifications. M. Jackson* ¹ , D. Anderson ¹ , H. Hsiao ¹ , F. Jin ¹ , and G. Mathis ² , ¹ <i>ChemGen Corp, Gaithersburg, Maryland</i> , ² <i>Southern Poultry Research, Athens, Georgia</i> .
8:15 AM	206	Use of vegpro to improve soybean meal digestibility in layers. A.E. Sefton* ¹ and S. Leeson ² , ¹ <i>Alltech, Inc., Guelph, ON, Canada</i> , ² <i>University of Guelph, Guelph, ON, Canada</i> .
8:30 AM	207	Broiler responses to a feed enzyme in diets differing in amino acid levels. M.L. West* ¹ , A. Corzo ¹ , W.A. Dozier ² , M.E. Blair ³ , and M.T. Kidd ¹ , ¹ <i>Mississippi State University, Mississippi State</i> , ² <i>USDA-ARS, Poultry Research Unit, Mississippi State, Mississippi</i> , ³ <i>Adisseo USA, Inc., Alpharetta, Georgia</i> .
8:45 AM	208	The effect of Avizyme 1502[®] on turkey poult performance from 0-56 days. C. Troche* ¹ , X. Sun ¹ , A. McElroy ¹ , J. Remus ² , and C. Novak ¹ , ¹ <i>Virginia Tech, Blacksburg</i> , ² <i>Danisco Animal Nutrition, Carol Stream, Illinois</i> .
9:00 AM	209	The effects of non-starch polysaccharide enzyme inclusion and dietary energy restriction on performance of organically-reared broiler chickens. N.P. Buchanan*, L.B. Merritt, G.E. Seidel, and J.S. Moritz, <i>West Virginia University, Morgantown</i> .
9:15 AM	210	0-to-6 week broiler performance effects of 3-nitro replacement in the diet. A. Parsons* ¹ , A. McElroy ¹ , T. Sefton ² , and C. Novak ¹ , ¹ <i>Virginia Tech, Blacksburg</i> , ² <i>Alltech, Inc., Guelph, ON, Canada</i> .
9:30 AM	211	Evaluation of corn nutrient profile, starch digestibility and exogenous enzyme responsiveness for samples harvested during 2003 and 2004. S. Dalsgaard* ¹ , J.C. Remus ² , M. Hruba ³ , and E.E.M. Pierson ² , ¹ <i>Danisco Innovations, Brabrand, Denmark</i> , ² <i>Danisco Animal Nutrition, St. Louis, Missouri</i> , ³ <i>Danisco Animal Nutrition, Marlborough, Wiltshire, United Kingdom</i> .
9:45 AM	212	Effects of simultaneous supplementation of alpha-galactosidase and citric acid on nutrient digestibility and growth performance of broiler chicks. T. Ao*, A. Cantor, A. Pescatore, M. Ford, and J. Pierce, <i>Alltech-University of Kentucky</i>

<i>Nutrition Research Alliance, Lexington.</i>		
10:00 AM		Break.
10:15 AM	213	Phytase, carbohydrase and protease have an additive effect on the performance of broilers fed on nutritionally marginal diets. A. Cowieson ¹ , E. Pierson* ² , T. D'Alfonso ² , and O. Adeola ³ , ¹ <i>Danisco Animal Nutrition, Marlborough, Wiltshire, United Kingdom</i> , ² <i>Danisco Animal Nutrition, St Louis, Missouri</i> , ³ <i>Purdue University, West Lafayette, Indiana.</i>
10:30 AM	214	Influence of phyzyme XP™ on commercial leghorns fed corn-soy diets. G. Wu*, Z. Liu, M.M. Bryant, and D.A. Roland, <i>Auburn University, Auburn, Alabama.</i>
10:45 AM	215	Effect of microbial phytase supplementation on nutrient digestibility of corn and soybean meal-based broiler diets. N.K. Sakomura ¹ , F. Santos ¹ , M. Hruby ² , E.M. Pierson ³ , J.C. Remus ³ , and J.S. Sands* ² , ¹ <i>Universidade Estadual Paulista, Jaboticabal, São Paulo, Brazil</i> , ² <i>Danisco Animal Nutrition, Marlborough, Wiltshire, United Kingdom</i> , ³ <i>Danisco Animal Nutrition, St. Louis, Missouri.</i>
11:00 AM	216	Influence of dietary supplementation of organic minerals and phytase on mineral concentration in manure of replacement pullets. A. Mañón, A. Cantor*, A. Pescatore, M. Ford, H. Gillespie, and M. Daley, <i>Alltech-University of Kentucky Nutrition Research Alliance, Lexington.</i>
11:15 AM	217	Holo-analysis of the effects of genetic, managerial, chronological and dietary variables on the efficacy of a pronutrient mannanoligosaccharide in turkeys. G. Rosen*, <i>Pronutrient Services Ltd., London, England.</i>
11:30 AM	218	Adsorption in comparison to enzymatic degradation - which is the best method for deactivating mycotoxins in animal feed? G. Schatzmayr* ¹ , D. Schatzmayr ¹ , S. Nitsch ¹ , and E. Binder ² , ¹ <i>Biomim GmbH, Herzogenburg, Austria</i> , ² <i>Erber AG, Herzogenburg, Austria.</i>

SYMPOSIA AND ORAL SESSIONS

Poultry Meat & Egg Quality Symposium Chair: S.F. Bilgili, Auburn University Meeting Room I	
1:00 PM	New European food law requirements. R.W. Mulder*, <i>Spelderholt® Poultry Consultancy & Research, The Netherlands.</i>
1:30 PM	Proposed egg safety regulations in the U.S. G. Ramirez*, <i>FDA, Division of Dairy and Egg Safety, Washington, D.C.</i>
2:00 PM	Ready-to-eat poultry meat safety. P. Dawson*, <i>Clemson University, Clemson, South Carolina.</i>
2:30 PM	EU perspective on pathogen control in poultry meat and eggs. N.M. Bolder*, <i>Animal Science Group, Lelystad, The Netherlands.</i>
3:00 PM	Break.
3:15 PM	Functionality of poultry meat. M.A. Grashorn*, <i>University of Hohenheim, Germany.</i>

3:45 PM	Muscle growth and poultry meat quality. M.J. Duclos*, C. Berri, and E. Le Bihan-Duval, <i>Centre INRA de Tours, France.</i>
4:15 PM	Marination to improve functional properties and safety of poultry meat. C. Alvarado* ¹ , and S. McKee ² , ¹ <i>Texas Tech University, Lubbock</i> , ² <i>Auburn University, Auburn, Alabama.</i>

Nutrition Vitamins and Minerals Chair: J. Emmert, University of Arkansas Meeting Room EFG	
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1:00 PM	219	Factors affecting bone mineral density of brown and white laying hens. K.L. Nadeau*, C.M. Riczu, and D.R. Korver, <i>University of Alberta, Edmonton, AB, Canada.</i>
1:15 PM	220	Effect of vitamins A, D and vitamin D metabolites on experimentally-induced tibial dyschondroplasia. N.C. Rath* ¹ , G.R. Huff ¹ , W.E. Huff ¹ , R.L. Horst ² , P.B. Pillai ³ , and J.L. Emmert ³ , ¹ <i>USDA, ARS, PPPSR, Fayetteville, Arkansas</i> , ² <i>USDA, ARS, NADC, Ames, Iowa</i> , ³ <i>University of Arkansas, Fayetteville.</i>
1:30 PM	221	Effect of 25-OH vitamin D₃ on broiler breeder production, hatchability and chick innate immune function. J.L. Saunders-Blades* and D.R. Korver, <i>University of Alberta, Edmonton, AB, Canada.</i>
1:45 PM	222	Inorganic versus organic mineral premix comparison in broilers. J.H. Skaggs* ¹ , M.E. Persia ¹ , A.E. Sefton ² , and W.W. Saylor ¹ , ¹ <i>University of Delaware, Newark</i> , ² <i>Alltech, Inc., Nicholasville, Kentucky.</i>
2:00 PM	223	Effects of vitamin E and arginine on cardiopulmonary function in broilers. A. Lorenzoni* and C. Ruiz-Feria, <i>McGill University, Montreal, QC, Canada.</i>
2:15 PM	224	Maternal selenium nutrition: Effects on egg and chick selenium status. P.F. Surai* ¹ , A.C. Pappas ² , F. Karadas ³ , B.K. Speake ² , and N.H.C. Sparks ² , ¹ <i>Alltech (UK) Ltd, Stamford, United Kingdom</i> , ² <i>Avian Science Research Centre, Edinburgh, United Kingdom</i> , ³ <i>University of Yüzüncü Yil, Van, Turkey.</i>
2:30 PM	225	Selenium-enriched eggs as a source of dietary selenium for humans. P.F. Surai* ¹ , M. Mezes ² , and J. Dvorska ³ , ¹ <i>Alltech (UK) Ltd., Stamford, United Kingdom</i> , ² <i>Szent Istvan University, Godollo, Hungary</i> , ³ <i>Sumy National Agrarian University, Sumy, Ukraine.</i>
2:45 PM	226	The available phosphorus and calcium requirements of chicks fed corn and peanut meal based diets with and without added phytase. G. Pesti*, R. Bakalli, and J. Driver, <i>The University of Georgia, Athens.</i>
3:00 PM	Break.	
3:15 PM	227	Effects of dietary calcium on the egg production, feed intake and egg quality of laying hens fed corn and peanut meal based diets. G. Pesti*, R. Bakalli, and J. Driver, <i>University of Georgia, Athens.</i>
3:30 PM	228	Caged laying hen trials using dietary <i>Bacillus subtilis</i> C-3102 spores (Calsporin®) demonstrate improvements in egg shell thickness. D.M. Hooge* ¹ , M. Kato ² , and K. Nishimura ³ , ¹ <i>Hooge Consulting Service, Inc., Eagle Mountain, Utah</i> , ² <i>Calpis Company Ltd, Tokyo, Japan</i> , ³ <i>Quality Technology International, Inc., Elgin, Illinois.</i>
3:45 PM	229	Phosphorus bioavailability of two phosphorus sources for broiler prestarter diets.

A. Garcia*, A. Batal, and N. Dale, <i>University of Georgia, Athens.</i>		
4:00 PM	230	Effects of dietary nonphytate phosphorus level on roaster performance and phosphorus excretion. M.E. Persia* ¹ , R. Angel ² , and W.W. Saylor ¹ , ¹ <i>University of Delaware, Newark,</i> ² <i>University of Maryland, College Park.</i>
4:15 PM	231	Mintrex™ Zn organic trace mineral (zinc bis[-2-hydroxy-4-methylthiobutyrate]) can travel intact to the small intestine, and is equivalent to Alimet® feed supplement as a methionine source. J. Richards*, C. Atwell, J. Hume, and J. Dibner, <i>Novus International, Inc., St. Louis, Missouri.</i>

Reproduction Symposium Optimizing Reproductive Output From Female Broiler Breeders Chair: M. Zuidhof, Alberta Agriculture Auditorium		
1:00 PM		Welcome and opening remarks. M.J. Zuidhof*, <i>Alberta Agriculture, Edmonton, AB, Canada.</i>
1:05 PM	232	Reviewing our course: Development of the modern broiler. J.H. van Middelkoop*, <i>Spelderholt Institute, The Netherlands.</i>
1:35 PM	233	Is chick quality a price we have to pay for yield? M.J. Wineland*, <i>North Carolina State University, Raleigh.</i>
2:05 PM	234	Reproductive strategies of breeder hens. R.A. Renema*, <i>University of Alberta, Edmonton, AB, Canada.</i>
2:35 PM		Impact of feeding on the metabolism and lipid handling of the hen. R.L. Walzem*, <i>Texas A&M University.</i>
3:05 PM		Break.
3:20 PM		Charting our course: Development of tomorrow's broiler. J.Hardiman*, <i>Cobb-Vantress, Siloam Springs, Arkansas.</i>
3:50 PM	235	Tying it all together: Final comments. M.J. Zuidhof*, <i>Alberta Agriculture, Edmonton, AB, Canada.</i>