

**NE-1034 Publication List
Annual Report, 2009**

Alabama

Peer-reviewed publications:

*van Ginkel, F.W., Toro, H., Tang, D.C., Gulley, S.L. 2008. Induction of Mucosal Immunity in the Avian Harderian Gland with a Replication-Deficient Ad5 vector Expressing Avian Influenza H5. *Dev. Comp. Immunol* 33:28-34.

van Ginkel, F.W., van Santen, V.L., Gulley, S.L., and Toro, H. 2009. Infectious Bronchitis Virus in the Chicken Harderian Gland and Lachrymal Fluid: Viral Load, Infectivity, Immune Cell Responses, and Effects of Viral Immunodeficiency. *Avian Dis.* 52: 608-617.

Toro, H., Effler, J., Hoerr, F. J., and van Ginkel, F. W. 2009. Effects of Infectious Bursal Disease Virus Variant AL2 on the Immune System in Young Chickens. *Avian. Dis.* 53: 78-82.

*reported last year as being in press

Proceedings, Abstracts and Presentations:

H. Toro, D.C. Tang, D.L. Suarez, F.W. van Ginkel. 2009. Avian Influenza Spray Vaccination with Non-Replicating Adenovirus Vector. AAAP, Seattle July 12-15.

Arkansas

Book Chapters/Review Articles

Erf, G. F. 2009 Animal models. In: *Vitiligo Handbook*, Picardo, M and Taieb, A, editors. Springer Verlag GmbH, Heidelberg, Germany (in press).

In Print Full Length Articles

Wideman, R. F., O. T. Bowen, and G. F. Erf. 2009. Broiler pulmonary hypertensive responses during lipopolysaccharide-induced tolerance and cyclooxygenase inhibition. *Poult. Sci.* 88:72-85.

Lorenzoni, G. R. F. Wideman, N. Rath and G. F. Erf. 2009. Cellular components of lavage fluid from broilers with normal versus aerosol-primed airways. *Poult. Sci.* 88:303-308.

Bowen, O. T., R. L. Dienglewicz, R. F. Wideman, and G. F. Erf. 2009a. Altered monocyte and macrophage numbers in blood and organs of chickens injected i.v. with lipopolysaccharide. *Vet. Immunol. Immunopathol.* (accepted 4/7/2009, *VETIMM-D-08-1372*).

Medrano, G., M. Dolan, N. Stephens, A. McMickle, G. F. Erf, D. Radin and C. Cramer. 2009. Efficient plant-based production of chicken IL-12 yields a strong immunostimulatory cytokine. *J. Interferon & Cytokine Res.* (JICR-2009-0040; submitted).

Rath, N. C., N. B. Anthony, L., Kannan, W. E. Huff, G. R. Huff, H. D. Chapman, G. F. Erf and P. Wakenell. 2009. Evaluation of ovotransferrin as a nonspecific marker of health problems in chickens. *Poult. Sci.* (in press).

Bowen, O. T., R. L. Dienglewicz, R. F. Wideman, and G. F. Erf. 2009b. Effects of repeated i.v. lipopolysaccharide (LPS) injection on hematological characteristics of chicken blood. *Vet. Immunol. Immunopathol.* 131:200-210.

Gadde, U., H. D. Chapman, T. R. Rathinam, and G. F. Erf. (2009). Acquisition of immunity to the protozoan parasite *Eimeria adenoeides* in turkey poults and the peripheral blood leucocyte response to a primary infection. *Poult. Sci.* (in press)

Hamal, K. R., R. F. Wideman, N. B. Anthony, and G. F. Erf. 2009. Differential gene expression of pro-inflammatory chemokines and cytokines in lungs of ascites-resistant and -susceptible broiler chickens following intravenous cellulose microparticle injection. *Vet. Immunol. Immunopathol.* (in press, VETIMM-D-09-1490)

In Print Articles and Proceedings Papers

Erf, G. F. 2009. Vitiligo Research Centers: Arkansas. In: Vitiligo Road Map. National Vitiligo Foundation Website, http://www.nvfi.org/map/road_map.php

Erf, G. F. 2009. Genetically Controlled Diseases in Poultry: Lessons learned from the autoimmune disease-prone Smyth line chicken. Proceedings of the Breeders Roundtable, St. Louis, MO (10 pages).

In Print Abstracts

Wideman, R. F., K. Hamal, M. Bayona, A. Lornzoni, D. Cross, G. Erf, and N. Anthony. 2009. Complex vascular lesions in the lungs of domestic fowl selected for susceptibility to pulmonary arterial hypertension: incidence and histology. FASEB, Abstract 3099.

Hamal K. R., R. Wideman, D. Cross, D. Rhoads, N. Anthony, G. Erf. 2009. Immunohistochemical examination of complex vascular lesions in the lungs of domestic fowl selected for susceptibility to pulmonary hypertension. FASEB, Abstract 3295.

Erf, G. F., Bateman, K. D., and M. Heidari. 2009. Role of Marek's disease viruses in the expression of vitiligo in vitiligo-susceptible Smyth line chickens. *Pigment Cell & Melanoma Res.* 22;498.

Shi, F., B. L. Plumlee, and G. F. Erf. (2009). Autoinflammatory/autoimmune vitiligo in Smyth line chickens: Immune system- and melanocyte-related activities in feathers and in

feather melanocytes isolated by laser capture microdissection. *Pigment Cell & Melanoma Res.* 22:499.

Thesis/Dissertation completed (program/position of student after completion of thesis/dissertation)

Olivia Bowen. *Ph.D.* 2008. Systemic effects of lipopolysaccharide in chickens. (Post-doctoral fellow, USDA-ARS, Athens, GA)

Collin Trovillion. *Honors (ARSC)* 2009. Macrophage involvement in the development of Smyth line vitiligo. (Medical School, University of Arkansas, Little Rock, AR)

Nick Tinsley. *M.S.* 2009. Proteomic analysis of melanocytes derived from embryos of vitiliginous and normally pigmented chickens. (Pharmacy School, University of Arkansas, Little Rock, AR)

California

Kogut MH, Klasing K. An immunologist's perspective on nutrition, immunity, and infectious diseases. *Appl Poult Res.* 2009;18:103-10.

Hernandez J, Soto-Canevett E, Pinelli-Saavedra A, Resendiz M, Moya-Camarena SY, Klasing KC. In vitro effect of vitamin E on lectin-stimulated peripheral blood mononuclear cells. *Vet Immunol Immunopathol.* 2009 Sep 15;131:9-16.

Buyse J, Swennen Q, Vandemaele F, Klasing KC, Niewold TA, Baumgartner M, Goddeeris BM. Dietary beta-hydroxy-beta-methylbutyrate supplementation influences performance differently after immunization in broiler chickens. *Journal of Animal Physiology and Animal Nutrition.* 2009 Aug;93:512-9.

Blatchford RA, Klasing KC, Shivaprasad HL, Wakenell PS, Archer GS, Mench JA. The effect of light intensity on the behavior, eye and leg health, and immune function of broiler chickens. *Poult Sci.* 2009 Jan;88:20-8.

Addison B, Klasing KC, Robinson WD, Austin SH, Ricklefs RE. Ecological and life-history factors influencing the evolution of maternal antibody allocation: a phylogenetic comparison. *Proc Biol Sci.* 2009 Aug 26.

Lee KA, Wikelski M, Robinson WD, Robinson TR, Klasing KC. Constitutive immune defences correlate with life-history variables in tropical birds. *J Anim Ecol.* 2008 Mar;77:356-63

City of Hope

Publications in peer-reviewed journals

Hosomichi, K., Miller, M.M., Goto, R.M., Wang, Y., Suzuki, S., Kulski, J.K., Nishibori, M., Inoko, H., and Shiina, T. 2008. Contribution of mutation, recombination and gene conversion to chicken Mhc-B haplotype diversity. *J. Immunol.* 181: 3393-3399. PMID: PMC2657362

Sherman, M., Goto, R.M. Moore, R.E., Hunt, H.D., Lee, T.D., and Miller, M.M. 2008. Mass spectral data for 64 eluted peptide and structural modeling define peptide binding preferences for class I alleles in two chicken MHC-B haplotypes associated with opposite responses to Marek's disease. *Immunogenetics* 60: 527-541. DOI: 10.1007/s00251-008-0302-6

Hee, C.S., Gao, S., Miller, M.M., Goto, R.M., Ziegler, A., Daumke, O., and Uchanska-Ziegler, B. 2009. Expression, purification and preliminary X-ray crystallographic analysis of the chicken MHC class I molecule YF1*7.1. *Acta Crystallographica Section F. Structural Biology and Crystallization Communications.* F65: 422-425. PMID: 19342797. DOI: 10.1107/S1744309109009026

Delany, M.E., Robinson, C.M., Goto, R.M., and Miller, M.M. 2009. Architecture and organization of chicken microchromosome 16: Order of the *NOR*, *MHC-Y* and *MHC-B* subregions. *J. Heredity* 100:507-514. DOI:10.1093/jhered/esp044

Goto, R.M., Wang, Y., Taylor, Jr., R.L., Wakenell, P.S., Hosomichi, K., Shiina, T., Blackmore, C.S., Briles, W.E., and Miller, M.M. 2009. *BG1* has a major role in MHC-linked resistance to malignant lymphoma in the chicken. *Proc. Nat. Acad. Sci. USA Early Edition September 11, 2009.* doi:10.1073/pnas.0906776106

Abstracts and Poster Presentations

Miller, M.M. 2008. Genes, variability, and linkage in the chicken MHC *B* and *Y* Regions. NRI Animal Genome Annual Investigator Meeting. Handlery Hotel Mission Valley, San Diego, CA. January 11, 2008. Poster Presentation.

Wang, Y., Goto, R.M., Miller, M.M. 2008. *BG1*, a candidate gene affecting the occurrence of the herpesvirus-associated avian lymphomas. *FASEB J.* 2008 22:856.10.
Zhang, L., Katselis, G.S., Goto, R.M., Goebel, T.M., Yokoyama, W.M., Lee, T.D., Miller, M.M. 2008. Proteomic Approaches to Defining Avian Natural Killer Cell Surface Proteins. *FASEB J.* 2008 22:620.3.

Katselis, G.S., Zhang, L., Goto, R.M., Moore, R.E., Ge, H., Miller, M.M., and Lee, T.D. 2008. Proteomic characterization of natural Killer cell surface proteins in the avian immune system. American Society for Mass Spectrometry 2008 Meeting. Immunology Session. Poster 364.

Miller, M.M., Wang, Y., Goto, R.M., Wakenell, P.S., Taylor, R.L. Jr. 2008. Genetic resistance to GaHV-2 induced lymphoma in the chicken model. *Infectious Agents and Cancer* 2009, 4 (Suppl 2): P28.

Miller, M.M. 2009. Genes, variability, and linkage in the chicken MHC *B* and *Y* Regions. NRI Animal Genome Annual Investigator Meeting. Town and Country Resort Hotel, San Diego, CA. January 9, 2009. Oral Presentation.

Miller, M.M. 2009. Genetic factors contributing to chicken MHC-B haplotype diversity. Poultry Workshop at the Plant and Animal Genome XVII, Town and Country Resort Hotel, San Diego, CA. January 10-11, 2009. Oral Presentation.

Delaware

Arumugaswami, V., P. M. Kumar, V. Konjufca, R. L. Dienglewicz, S. M. Reddy and M. S. Parcels. 2009. Latency of Marek's Disease Virus (MDV) in a Reticuloendotheliosis Virus-Transformed T-cell Line. I: Uptake and Structure of the Latent MDV Genome. *Avian Dis.* 53:149-155.

Arumugaswami, V., P. M. Kumar, V. Konjufca, R. L. Dienglewicz, S. M. Reddy and M. S. Parcels. 2009. Latency of Marek's Disease Virus (MDV) in a Reticuloendotheliosis Virus-Transformed T-cell Line. II: Expression of the Latent MDV Genome. *Avian Dis.* 53:156-165.

McCarthy, F. M., T. J. Mahony, M. S. Parcels, and S. C. Burgess. 2009. Understanding Animal Viruses Using the Gene Ontology and AgBase. *Trends in Microbiology* 17:328-335.

Morgan, R. W., A. Anderson, E. Bernberg, S. Kamboj, E. Huang, G. Lagasse, G. Isaacs, M. Parcels, B.C. Myers, P. J. Green, and J. Burnside. 2008. Sequence Conservation and Differential Expression of Marek's Disease Virus microRNAs. *J. Virol.* 82:12213-12220.

Tavlarides-Hontz, P., P. M. Kumar, J. R. Amortegui, N. Osterrieder, and M. S. Parcels. 2009. A deletion within glycoprotein L of Marek's disease virus (MDV) field isolates correlates with a decrease in bivalent MDV vaccine efficacy in contact-exposed chickens. *Avian Dis.* 53:287-296.

Master's Thesis Completed

CHARACTERIZATION OF A BACTERIAL ARTIFICIAL CHROMOSOME (BAC)-BASED INFECTIOUS CLONE OF A LOW PASSAGE MAREK'S DISEASE VIRUS (MDV) VACCINE STRAIN, CVI988, Master's Degree Thesis, Spring 2009, Erin McDowell

Senior Thesis Completed

GENERATION OF RECOMBINANT MAREK'S DISEASE VIRUSES *IN VIVO*, Senior Thesis, Spring 2009, Dawn Lenihan

Denmark

Publications in previewed journals

T.W. Schou, A. Permin, J.P. Christensen, H.P. Cu., and H.R. Juul-Madsen 2008. Mannan-binding lectin (MBL) in two chicken breeds and the correlation with experimental *Pasteurella multocida* infection. *Comparative Immunology, Microbiology and Infectious Diseases* (DOI: 10.1016/j.cimid.2008.08.010).

Norup, L.R., Dalgaard, T. S., Friggens, N., Sørensen, P., Juul-Madsen, H. R. 2009. Influence of chicken serum mannose-binding lectin levels on the immune response towards *Escherichia coli*. *Poult Sci.* 2009 88(3):543-53.

Star L., Juul-Madsen H.R., Decuypere E., Nieuwland M.G.B., De Vries reilingh G., Kemp b., Van den Brand H., and Parmentier H.K. 2008. Effect of early-life thermal conditioning and immune challenge on thermo tolerance and humoral immune competence in adult laying hens. Manuscript accepted for publication in *Poultry Sciences*.

Dalgaard T., Bøving M., Handberg K., Jensen K., Liselotte L., Juul-Madsen H.R. 2009. MHC expression on spleen lymphocyte subsets in genetically resistant and susceptible chickens infected with Marek's Disease virus. Manuscript accepted for publication in *Viral Immunology*.

Proceedings

Juul-Madsen H.R. 2008. Genetic variation in acute phase proteins and the influence on disease resistance in breeding animals. 7th APP Congress, September 30th – October 3th. Barcelona.

H. R. Juul-Madsen, T. S. Dalgaard, A. Permin, T. W. Schou, and L. R. Norup. 2009. Importance of the genotype-environmental interaction in chickens with focus on Major Histocompatibility Complex (MHC) and Mannose-Binding Lectin (MBL). 76 Poultry Diseases Seminar Hannover meeting.

Iowa

REFEREED JOURNAL PAPERS:

Abasht, B., Kaiser, M.G., van der Poel, J., Lamont, S.J. 2009. Genetic lines differ in Toll-like receptor gene expression in spleen of chicks inoculated with *Salmonella enterica* Serovar Enteritidis. *Poultry Sci.* 88: 744-749.

Chuammitri, P., Ostojić, J., Andreasen, C.B., Redmond, S.B., Lamont, S. J. and Palić, D. 2009. Chicken heterophil extracellular traps (HETs): novel defense mechanism of chicken heterophils. *Vet. Immunol. Immunopathol.* 129: 126-131.

Kim., D.K., Kim, C.H., Lamont, S.J., Keeler, Jr., C.L. and Lillehoj, H.S., 2009 Gene expression profiles of two B-complex disparate, genetically inbred Fayoumi chicken lines that differ in susceptibility to *Eimeria maxima*. Poultry Sci. 88::1565-1579. doi:10.3382/ps.2009-00012

Redmond, S.B., Chuammitri, P., Palic, D., Andreasen, C. B., Lamont, S.J. 2009. Chicken heterophils from commercially selected and non-selected genetic lines express cytokines differently after in vitro exposure to *Salmonella enteritidis*. Vet. Immunol. Immunopathol. (2009): doi:10.1016/j.vetimm.2009.05.010

PUBLISHED ABSTRACTS:

Beach, E., Ciraci, C., Abasht, B., Dekkers, J.C.M, and Lamont, S.J. 2009. SNPs in region of NF-kappa-B gene associated with expression of immune-related genes. Proc Poultry Science Association Annual Meeting, July 2009, Raleigh NC

Ciraci, C., Tuggle, C., Wannemuehler, M., and Lamont, S.J. 2009. *Salmonella* endotoxin effects on expression of immune response genes in chicken macrophages. Proc.18th Ann. Growth Factor Signal Transduction Symp. 2009 June 11-14. Iowa State University, Ames, Iowa.

Izadi, F., Lamont, S.J., Ritland, K., and Cheng, K.M. 2009. Genetic diversity of free-run/free-range chicken flocks estimated by neutral and adaptive molecular markers. P515. Proc. Plant & Animal Genome XVI, San Diego, CA.

Redmond, S.B., Tell, R. Coble, D., Mueller, C., Palić, D., Andreasen, C.B. and Lamont, S.J. 2009. Immunonutrigenomics of the chicken spleen. Proc.18th Ann. Growth Factor Signal Transduction Symp. 2009 June 11-14. Iowa State University, Ames, Iowa.

Zhou, H., Dowd, S.E., Lamont, S.J. 2009. Global transcriptional profiles reveal distinct mechanisms of innate response to salmonella in three genetic lines of chickens. P507. Proc. Plant & Animal Genome XVI, San Diego, CA.

REPORTS (WEB-ACCESSIBLE):

Animal Industry Reports at: <http://www.ans.iastate.edu/report/air>

Beach, E., Abasht, B., Fernando, R., Dekkers, J.C.M., Lamont, S.J., Arango, J., Settar, P., Fulton, J., O'Sullivan, N.P. 2009. Extent and consistency of lineage disequilibrium and identification of DNA markers for production and egg quality traits in commercial layer chicken populations. Iowa State University Animal Industry Report, 2009, A.S. Leaflet R2444

Ciraci, C., Kaiser, M.G., and Lamont, S.J. 2009. Chicken antibody response to *Salmonella enteritidis* vaccine in advanced intercross lines and parental lines. Iowa State University Animal Industry Report, 2009, A.S. Leaflet R2379

Redmond, S.B. and Lamont, S.J. 2009. Genetic differences in chicken heterophil mRNA expression in response to in-vitro stimulation with *Salmonella enteritidis*. Iowa State University Animal Industry Report, 2009, A.S. Leaflet R2445

Indiana

Goto, R. M., Y. Wang, R. L. Taylor, Jr., P. S. Wakenell, K. Hosomichi, T. Shiina, C. Blackmore, W. E. Briles, and M. M. Miller. 2009. BG1 has a major role in MHC-linked resistance to malignant lymphoma in the chicken. Proc. Natl. Acad. Sci. USA 106:16740-16745 (*published online 9/11/09*)

Blatchford RA, Klasing KC, Shivaprasad HL, Wakenell PS, Archer GS, Mench JA. The effect of light intensity on the behavior, eye and leg health, and immune function of broiler chickens. Poult Sci. 2009 Jan;88:20-8.

Rath, N.C., Huff, W.E., Rasaputra, K.S., Kannan, L., Vijay, D., Anthony, N.B., Chapman, H.D., Wakenell, P., and F. D. Clark. 2009. Ovotransferrin as a nonspecific marker of health problems in chickens. Poult Sci.

Wakenell, P.S. 2009. Normal Avian Hematology: Chicken and Turkey. In: Schalm's Veterinary Hematology 6th Ed. Wiley-Blackwell Press: In Press.

North Carolina

Book Chapters.

M. D. Koci and S. Schultz-Cherry. "Avastrovirus, Astroviridae". The Springer Index of Viruses. 2nd Edition. Ed C. Tidona and G. Darai. Springer Science. (In Press) 2009.

Refereed Journals.

J. Croom, M. Chichlowski, M. Froetschel, B. W. McBride, R. Qui and M. D. Koci. The effects of direct-fed microbial, Primalac®, or salinomycin supplementation on intestinal lactate isomers and cecal volatile fatty acid concentrations in broilers. International Journal of Poultry Science. 8: 128-132, 2009.

Abstracts

R. R. Meyerhoff, R. A. Ali, and M. D. Koci. Characterization of turkey iNOS and development of assays to study its role in poult enteritis. July 2009. Annual Meeting of the Poultry Science Association. Raleigh, NC.

R. A. Ali, and M. D. Koci. Development of a CXCL8 (IL-8) bioassay to determine its role in turkey poult viral enteritis. July 2009. Annual Meeting of the Poultry Science Association. Raleigh, NC.

R. Qiu, J. Croom, G. Wu and M. D. Koci. Effects of the DFM Primalac on crop structure and intestinal development in broilers. July 2009. Annual Meeting of the Poultry Science Association. Raleigh, NC.

P. K. Nighot, A. Moeser, R. A. Ali, A. T. Blikslager, and M. D. Koci. Astrovirus infection induces sodium malabsorption and redistributes sodium hydrogen exchanger expression. July 2009. Annual Meeting of the Poultry Science Association. Raleigh, NC.

M. D. Koci, R. A. Ali, M. D. Quiles, E. Strain, C. M. Ashwell. Evidence of Mx independent genetic resistance to viral infection. July 2009. Annual Meeting of the Poultry Science Association. Raleigh, NC.

R. Qiu, J. Croom, R. A. Ali, and M. D. Koci. The Effects of the DFM Primalac on energy repartitioning to the immune system of broilers. July 2009. Annual Meeting of the Poultry Science Association. Raleigh, NC.

W. L. Richards, R. A. Ali, C. M. Ashwell, and M. D. Koci. Determination of the effect genetic polymorphisms have on subcellular localization of the chicken Mx protein. July 2009. Annual Meeting of the Poultry Science Association. Raleigh, NC.

R. R. Meyerhoff, R. A. Ali, and M. D. Koci. Characterization of turkey iNOS and development of assays to study its role in poult enteritis. April 2009. The 18th Annual NC State University Undergraduate Research Symposium. Raleigh, NC.

W. L. Richards, R. A. Ali, C. M. Ashwell, and M. D. Koci. Determination of the effect genetic polymorphisms have on subcellular localization of the chicken Mx protein. April 2009. The 18th Annual NC State University Undergraduate Research Symposium. Raleigh, NC.

New Hampshire

Goto, R. M., Y. Wang, R. L. Taylor, Jr., P. S. Wakenell, K. Hosomichi, T. Shiina, C. Blackmore, W. E. Briles, and M. M. Miller. 2009. BG1 has a major role in MHC-linked resistance to malignant lymphoma in the chicken. *Proc. Natl. Acad. Sci. USA* 106:16740-16745 (*published online 9/11/09*)

Schulten, E. S., W. E. Briles and R. L. Taylor, Jr. 2009. Rous sarcoma growth in lines congenic for major histocompatibility (B) complex recombinant haplotypes. *Poult. Sci.* 88:1601-1607

Taylor, R. L., Jr., and C. M. Ashwell. 2009. Landmark papers from the first 100 years of Poultry Science Symposium: Introduction. *Poult. Sci.* 88: 811-812

Taylor, R. L., Jr., and F. M. McCorkle, Jr. 2009. A landmark contribution to Poultry Science - Immunological function of the bursa of Fabricius. *Poult. Sci.* 88: 816-823

Taylor, R. L., Jr. and T. R. Scott. 2009. Nunc Dimitis – Bruce Glick. *Poult. Sci.* 88:1129

Taylor, R. L., Jr. 2009. The future of poultry science research: Things I think I think. *Poult. Sci.* 88:1334-1338

Taylor, R. L., Jr. 2009. In memorium – Bruce Glick. *AAI Newsletter* July/August p. 17

Abstracts

Keeley, M., S. Smith, R. Taylor, and J. Anderson. 2009. Atherosclerotic gene expression modulated by a thiazoladinediones. 18th UNH COLSA Undergraduate Research Conference 2009 p. 12

Taylor, R. L., Jr., M. E. Chapman, R. F. Wideman, Jr., N. B. Anthony, and C. M. Ashwell. 2009. Ascites-resistant and susceptible broiler lines express different genes in their right ventricles. *Poult. Sci.* 88(Suppl. 1):51

New York

Peer reviewed papers

Miller, M.M., K.W. Jarosinski, and K.A. Schat. Negative modulation of the chicken infectious anemia virus promoter by COUP-TF1 and an E box-like element at the transcription start site binding δ EF1. *J Gen Virol*, 89:2998-3003, 2008*.

Schat, K.A. Chicken anemia virus. *Curr. Top. Microbiol. Immunol.* 331:151-184. 2009*
Piepenbrink M.S., X. Li, P.H. O'Connell, and K.A. Schat. Marek's disease virus phosphorylated polypeptide pp38 alters transcription rates of mitochondrial electron transport and oxidative phosphorylation genes. *Virus Genes* 39: 102-112, 2009.

Buscaglia, C., P.H. O'Connell, K.W. Jarosinski, I. Pevzner, and K.A. Schat. Selection for increased nitric oxide production does not increase resistance to Marek's disease in a primary broiler breeder line. *Avian Dis.* 53: In press, 2009.

Abdul-Careem, M.F., A. Javaheri-Vayeghan, S. Shanmuganathan, H.R. Haghghi, L.R. Read, K. Haq, K.A. Schat, M. Heidari, and S. Sharif. Establishment of an aerosol-based Marek's disease virus infection model. *Avian Dis.* 53: In press 2009. **

Abdul-Careem, M.F., K. Haq, S. Shanmuganathan, L.R. Read, K.A. Schat, M. Heidari, and S. Sharif. Induction of innate host responses in the lungs of chickens following infection with a very virulent strain of Marek's disease virus. *Virology*, In press 2009. **

* reported last year as in press.

** joint publication of two or more NE-1034 stations.

Ontario

Publications

Y. Lu, A.J. Sarson, J. Gong, H. Zhou, W. Zhu, Z. Kang, H. Yu, S. Sharif, Y. Han (2009) Expression profiles of genes in Toll-like receptor-mediated signaling of broilers infected with *Clostridium perfringens*. Accepted for publication in *Clinical and Vaccine Immunology*.

P. Parvizi, L. Read, M.F. Abdul-Careem, A.J. Sarson, C. Lusty, M. Lambourne, N. Thanthrige-Don, S.C. Burgess, S. Sharif (2009) Cytokine gene expression in splenic CD4⁺ and CD8⁺ T cell subsets of genetically-resistant and susceptible chickens infected with Marek's disease virus. Accepted for publication in *Veterinary Immunology and Immunopathology*.

N. Thanthrige-Don, M.F. Abdul-Careem, L.A. Shack, S.C. Burgess, S. Sharif (2009) Analyses of the spleen proteome of chickens infected with Marek's disease virus. Accepted for publication in *Virology*.

Y. Pei, J. Swinton, D. Ojkic, S. Sharif (2009) Genetic characterization of two low pathogenic avian influenza virus H5N1 isolates from Ontario, Canada. *Virus Genes*. 38:149-54.

M.F. Abdul-Careem, K. Haq, S. Shanmuganathan, L.R. Read, K.A. Schat, M. Heidari, S. Sharif (2009) Induction of innate host responses in the lungs of chickens following infection with a very virulent strain of Marek's disease virus. Accepted for publication in *Virology*.

M.F. Abdul-Careem, A. Javaheri-Vayeghan, S. Shanmuganathan, H.R. Haghghi, L.R. Read, K. Haq, K.A. Schat, M. Heidari, S. Sharif (2009) Establishment of an aerosol-based Marek's disease virus infection model. Accepted for publication in *Avian Diseases*.

P. Parvizi, M.F. Abdul-Careem, K. Haq, N. Thanthrige-Don, S. Sharif, Immune responses against Marek's disease virus. Accepted for publication in *Animal Health Research Reviews*.

H. Mohammadi, S. Sharif, R.R. Rowland, D. Yoo (2009) The lactate dehydrogenase-elevating virus capsid protein is a nuclear-cytoplasmic protein. *Archives of Virology* 154(7):1071-80.

M.F. Abdul-Careem, L.R. Read, P. Parvizi P, N. Thanthrige-Don, S. Sharif (2009) Marek's disease virus-induced expression of cytokine genes in feathers of genetically-defined chickens. *Developmental and Comparative Immunology* 33(4):618-23.

P. Parvizi, L.R. Read, M.F. Abdul-Careem, C. Lusty, S. Sharif (2009) Cytokine gene

expression in splenic CD4⁺ and CD8⁺ T cell subsets of chickens infected with MDV. *Viral Immunology* 22(1):31-8.

H. Zhou, J. Gong, J.T. Brisbin, H. Yu, A.J. Sarson, W. Si, S. Sharif, Y. Han (2009) Transcriptional Profiling Analysis of Host response to *Clostridium perfringens* Infection in Broilers. *Poultry Science* 88(5):1023-32.

M.R. Akbari, H.R. Haghghi, J.R. Chambers, J.T. Brisbin, L.R. Read, S. Sharif (2008) Expression of antimicrobial peptides in cecal tonsils of chickens treated with probiotics and infected with Salmonella. *Clinical and Vaccine Immunology* 15:1689-93.

Abstracts

H.R. Haghghi, L.R. Read, S. Behboudi, S. Sharif, Identification of T cell epitopes of the haemagglutinin (HA) antigen of avian influenza virus H5 subtype in chickens. Canadian Society for Immunology Annual Meeting, Whistler, BC, April 2009.

P. Parvizi, K. Andrzejewski, S. Sharif, Regulatory T cells in avian alpha-herpesvirus infection. Canadian Society for Immunology Annual Meeting, Whistler, BC, April 2009.

Texas

Publications

Chiang HI*, LR. Berghman, H. Zhou. 2009. Inhibition of NF- κ B 1 (NF-kBp50) by RNA interference in chicken macrophage HD11 cell line challenged with Salmonella enteritidis. *Genetics and Molecular Biology* 32:507-515.

Lu Y, Lopes A, S. Sharif, K. Zhu, H. Zhou, H. Yu, and J. Gong. 2009. Expression profiles of genes in Toll-like receptor-mediated signaling of broilers infected with *Clostridium perfringens*. *Clinical and Vaccine Immunology*. Accepted for publication.

Sarson, AJ. Wang Y*, Kang Z, Dowd SE, Lu Y., Yu H., Han Y, Zhou H. and J. Gong. 2009. Gene expression profiling within the spleen of *Clostridium perfringens*-challenged Broilers fed antibiotic-medicated and non-medicated diets. *BMC Genomics* 10:260.

Satterfield, C. G. Song, K. Kochan, PK Riggs, R. Simmons, C. Elsik, D. Adelson, F. Bazer, H. Zhou, T. Spencer. 2009. Discovery of candidate genes in the endometrium regulating ovine blastocyst growth and conceptus elongation. *Physiological Genomics* In press.

Kong, X., YZ Zhang, YL Yin, GY Wu, HJ Zhou, ZL Tan, F Yang, MJ Bo, RL Huang, TJ Li, MM Geng. 2009. Chinese yam polysaccharide enhances growth performance and cellular immune response in weanling rats. *J. Sci. Food Agric.* DOI 10.1002/jsfa.3688

Zhou H, J. Gong, J. Brisbin, H. Yu, A. Sarson, W. Si, S. Sharif, and Y. Han. 2009. Transcriptional Profiling Analysis of Host response to *Clostridium perfringens* Infection in Broilers. *Poult. Sci.* 88:1023-1032.

Wang J. G. Wu. H. Zhou. F. Wang. 2009. Emerging technologies for amino acid nutrition research in the post-genome era. *Amino Acids.* 37:177-186.

Abstracts

Li X., C. L. Swaggerty, M. H. Kogut, H. Chiang, Y. Wang, K. J. Genovese, H. He, V. DiRita, I. Y. Pevzner, H. Zhou. 2009. Gene expression profiling of innate immune response to *Campylobacter jejuni* infection in the bursa of broilers. *Proc. Plant & Animal Genome XVII*, San Diego, CA.

Wang Y., V. Brahmakshatriya, B. Lupiani, S. Reddy, B. Yoon, H. Zhu, P. Gunaratne, R. Chen, H. Zhou. 2009. Identification of differentially expressed microRNAs In chicken lung and trachea with avian influenza virus infection by Solexa Sequencer. *Proc. Plant & Animal Genome XVII*, San Diego, CA.

Li X., C. L. Swaggerty, M. H. Kogut, H. Chiang, Y. Wang, K. J. Genovese, H. He, I. Y. Pevzner, H. Zhou. 2009. Genome-wide gene expression profiling of chicken spleen responding to *Campylobacter jejuni* infection in broilers. *Proc. Plant & Animal Genome XVII*, San Diego, CA.

H.I. Chiang,, C. Swaggerty, M. Kogut, and H. Zhou. 2009. Gene expression profiling In *Salmonella enterica* serovar typhimurium stimulated heterophils using A chicken 44K Agilent microarray. *Proc. Plant & Animal Genome XVII*, San Diego, CA.

Zhou H., S. Dowd, S. Lamont. 2009. Global transcriptional profiles reveal distinct mechanisms of innate response to *Salmonella* in three genetic lines of chickens. *Proc. Plant & Animal Genome XVII*, San Diego, CA.

Wang Y., V. Brahmakshatriya, B. Lupiani, S. Reddy, R. Okimoto, X. Li, H. Chiang, H. Zhou. 2009 Associations of Chicken Mx Polymorphism with Antiviral Responses in Avian Influenza Virus Infected Embryo and Broilers. 98th Annual Poultry Science meeting, Raleigh, NC.

Hilley J., X. Li, C. L. Swaggerty, M. H. Kogut, H. Chiang, Y. Wang, K. Genovese, H. He, V. J. Dirita, I. Pevzner, H. Zhou. 2009 Innate immune response to *Campylobacter jejuni* infection in the broiler bursa. 98th Annual Poultry Science meeting, Raleigh, NC. 2009

Li X., C. L. Swaggerty, M. H. Kogut, H. Chiang, Y. Wang, K. Genovese, H. He , I. Pevzner, H. Zhou. 2009. Gene expression profiling difference between resistant and susceptible broilers responding to *Campylobacter jejuni* infection. 98th Annual Poultry Science meeting, Raleigh, NC.

Chou W., X. Li, C. Bailey, H. Zhou. 2009. Gene Expression Profiling among Liver, Bone Marrow and Kidney in Broilers. 98th Annual Poultry Science meeting, Raleigh, NC.

USDA

Heidari M., Sarson A.J., Huebner M., Sharif S., Kireev D., and Zhou H. Marek's disease virus-induced immunosuppression: array analysis of chicken immune response genes expression profiling. *Viral Immunology* (Submitted on 9/14/09).

Chang S., Dunn J.R., Heidari M., Lee L.F., Song J., Ernst C.W., Ding Z., Bacon L.D., and Zhang H. Genetics and vaccine efficacy: host genetic variation affecting Marek's disease vaccine efficacy in White Leghorn chickens. *Vaccine* (Submitted on 9/2/09).

Spatz S.J., Gemeno I.M., Witter R.L., and Heidari M. The genomics of Marek's Disease virus exist as quasispecies at defined intervals during serial passage-induced attenuation. *Journal of Virology* (Submitted on 9/30/09).

Abdul-Careem, M.F., Javaher-Vayeghan A., Shanmuganthan S., Haghghi H.R., Read L.R., Hag K., Schat K.A., Heidari M., and Sharif S. Establishment of an aerosol-based Marek's disease virus infection model. *Avian Diseases* (Accepted on 4/18/09).

Abdul-Careem, M.F., Hag K., Shanmuganthan S., Read L., Schat K.A., Heidari M., and Sharif S. Induction of innate host responses in the lungs of chickens following infection with a very virulent strain of Marek's disease virus. *Virology* (Accepted on 8/2/09).

Heidari, M., Huebner, M., Silva, R. F., and Kireev, D. Transcriptional profiling of Marek's disease virus genes during cytolitic and latent infection. *Virus Genes* 36: 383-392. 2008.

Heidari, M., Zhang, H.M., and Sharif, S. Marek's Disease virus induces Th2 activity during cytolitic infection. *Viral Immunol.* 21:203-214.2008.

Abdul-Careem, M.F., Hunter, B.D., Sarson, A.J., Parvizi, P., Haghghi, H.R., Read, L., Heidari, M., and Sharif, S. Host responses are induced in feathers of chickens infected with Marek's disease virus. *Virology* 370: 323-332. 2008.

Abdul-Careem, M.F., Hunter, B.D., Shanmuganathan, S., Haghghi, H.R.,

Read, L., Heidari, M., and Sharif, S. Cellular and cytokine responses in feathers of chickens vaccinated against Marek's disease. Accepted for publication in *Veterinary Immunology and Immunopathology*. 2008.

Abdul-Careem, M.F., Hunter, B.D., Lee, L.F., Fairbrother, J.H., Haghghi, H.R., Read, L., Heidari, M., Parvizi, P., and Sharif, S. Host responses in the bursa of Fabricius of chickens infected with virulent Marek's disease virus. *Virology* Jul 31, (Epub ahead of print). 2008.

Heidari, M., Fitzgerald, S.D., Zhang, H.M., Silva, R.F., Lee, L.F., and Dunn, J.R. MDV-induced skin leukosis in scaleless chickens: tumor development in the absence of feather follicles. *Avian Dis.* 51:713-718. 2007.

Lee, L. F., Silva, R. F., Cui, X., Zhang, H. M., Heidari, M. and Reddy, S. Characterization of LORF11, a unique gene common to the three Marek's disease virus serotypes. *Avian Dis.* 51:851-857. 2007.

Zhang, H. M., Bacon, L. D., Heidari, M., Muir, W. M., Groenen, M. A. M., Zhang, Y., Wong, G. K. S., Albers, G. A. A., Vereijken, A. L. J., Rattink, A. P., Okimoto, R., McKay, J. C., McLeod, S., and Cheng, H. H. Genetic variation at the tumor virus B (TVB) locus in commercial and laboratory chicken populations assessed by a medium or high throughput assay. *Avian Pathol.* 36:283-291. 2007.

Virginia

Peer reviewed

Kim S, Miska KB, McElroy AP, Fetterer RH, Jenkins MC, Cox CM, Stuard LH, Dalloul RA. 2009. Molecular cloning and functional characterization of avian interleukin-19. *Molecular Immunology*, DOI 10.1016/j.molimm.2009.08.027.

Published Abstracts

Folkerts O, Dalloul RA, Smith EJ, Reed KM. Sequencing and assembly of the genome of the domesticated turkey, *Meleagris gallopavo*. CHI Conference: Exploring Next-Generation Sequencing, Providence, RI. September 21-23, 2009.

Kim S, Miska KB, McElroy AP, Jenkins MC, Fetterer RH, Dalloul RA. Cloning and functional characterization of avian interleukin-19. Annual meeting of the Poultry Science Association, Raleigh, NC. July 20-23, 2009.

Stuard LH, Miska KB, Jenkins MC, Fetterer RH, Dalloul RA. Expression of innate immunity genes during *Eimeria praecox* infection in broilers. Annual meeting of the Poultry Science Association, Raleigh, NC. July 20-23, 2009.

Cox CM, Stuard LH, Kim S, McElroy AP, Bedford M, Dalloul RA. Effects of dietary β -glucan on immune gene expression of broiler chicks. Annual meeting of the Poultry Science Association, Raleigh, NC. July 20-23, 2009.

Dalloul RA, Folkerts O, Smith EJ, Reed KM, Crasta O, McElroy AP, Wong EA, Burt DW, Coulombe RA, Dodgson JB. Initial assembly of the turkey whole genome sequence. Annual meeting of the Poultry Science Association, Raleigh, NC. July 20-23, 2009.

Casterlow S, Li H, McElroy AP, Dalloul RA, Emmerson DA, Wong EA. Downregulation of liver expressed antimicrobial peptide (LEAP-2) mRNA following

coccidiosis challenge. Annual meeting of the Poultry Science Association, Raleigh, NC. July 20-23, 2009.

Stuard LH, Miska KB, Jenkins MC, Fetterer RH, Kim S, Dalloul RA. How *Eimeria praecox* infection affects broiler intestinal immunity. Annual meeting of the American Association of Avian Pathologists, Seattle, WA. July 11-14, 2009.

Dalloul RA, Crasta O, Folkerts O, Reed K, McElroy AP, Smith E, Burt D, Jensen R, Coulombe R, Dodgson J. The turkey genome sequence: Implications for Immunity, disease and overall health. Annual meeting of the American Association of Avian Pathologists, Seattle, WA. July 11-14, 2009.

Folkerts O, Crasta O, Shulaev V, Smith E, Dalloul RA. Next generation sequencing platforms facilitate small academic community-based genome efforts. Advances in Genome Biology and Technology (AGBT), Marco Island, Florida. February 4-7, 2009.

Wageningen University

L. Star, H. R. Juul-Madsen, E. DeCuyper, M. G. B. Nieuwland, G. De Vries Reilingh, H. Van den Brand, B. Kemp, H. K. Parmentier. Effect of early-life thermal conditioning and immune challenge on thermo tolerance and humoral immune competence in adult laying hens. In press, Poultry Sci.

L. Star, H. K. Parmentier, J. J. Van der Poel, B. Kemp. Robustness of laying hens : Is it all about genes, environment, or early-life experiences? WPSA, Brisbane 2008, 4pp

H. K. Parmentier, G. De Vries Reilingh, A. Lammers, B. Kemp. Effect of concurrent intratracheal LPS- and antigen challenge on antibody responses in poultry: Consequences for health management? WPSA, Brisbane 2008, 4 pp.

H. K. Parmentier, A.L. Klompen, G. de Vries Reilingh, A. Lammers. Effect of concurrent intratracheal lipopolysaccharide and human serum albumin challenge on primary and secondary antibody responses in poultry. Vaccine.26: 5510-5520, 2008

H. K. Parmentier, T. B. Rodenburg, G. de Vries Reilingh, B. Beerda, B. Kemp. Does enhancement of specific immune responses predispose laying hens for feather pecking. Poultry Sci.: 88: 536-542. 2009

G. Minozzi, H. K. Parmentier, B. Bed'hom, F. Minvielle, D. Gourichon, M-H. Pinard-van der Laan. 2008. Delayed-type hypersensitivity responses to KLH in F2 and backcrosses of two immune selected chicken lines: effect of immunisation and selection. Developments in Biologicals (Basel) 132: 267-270, 2008.

S. Wijga, H.K. Parmentier, M.G.B. Nieuwland, H. Bovenhuis. Genetic parameters for levels of natural antibodies in chicken lines divergently selected for specific antibody response. In press, Poultry Science.

M. Huber, L.P.L. van de Vijver, A. de Vries, D. Nierop, R. Adriaansen-Tennekes, H. K. Parmentier, H. Savelkoul, L. Coulier, S. Wopereis, E. Verheij, J. van der Greef, R. A.P. Hoogenboom. Effect of organically and conventionally produced feed on biomarkers of health in a chicken model. In press. Brit. J. Nutrition

H. Lai Thie, M. G. B. Nieuwland, B. Kemp, A. J. A. Aarnink, H. K. Parmentier. Effects of dust and airborne-dust-components on antibody responses, body weight gain, and heart morphology of broilers. In press Poultry Sci.

F. Biscarini, H. Bovenhuis, J. A. M. van Arendonk, H. K. Parmentier, A. P. Jungerius and J. J. van der Poel. Across-line SNP association study of innate and adaptive immune response in laying hens. In Press, Animal Genetics

A. de Greeff, M. Huber, L. van de Vijver, W. Swinkels, H. K. Parmentier, J. Rebel. Effect of organically and conventionally produced diets on jejunum physiology in chickens. Brit. J. of Nutrition, In press

R. Adriaansen-Tennekes, E. DeCuypere, H. K. Parmentier, H. F.J. Savelkoul. Chicken lines selected for their primary antibody response to SRBC show differential HPA axis responsiveness to mild stressors. In press Poultry Science.

R. Adriaansen-Tennekes, G. de Vries Reilingh, M. G. B. Nieuwland, H. K. Parmentier, H. F. J. Savelkoul. Chicken lines divergently selected for antibody responses to SRBC show differences in sensitivity to immunomodulation by diet, part I: humoral parameters. In press Poultry Science.

Western University

Book chapters/Review Articles

Collisson, EW, Drechsler Y, Singh S, Pei J, Seo SH. 2008. Memory: The essence of adaptive immunity to viral infection. Proc Annual Mtg, Asociacion de Veterinarios Especialististas en Ciencias Avicolas de Occidente, Tepatitlan, Jalisco, Mexico.

Smith AG, Jayaram J, Johnson CB, Ellis EA, Vitha S, Collisson EW, Holzenburg A. 2009. Improved protein detection using cold microwave technology. Methods Mol Biol. 536:533-43.

Full-length Manuscripts

Drechsler, Y, Bohls RA, Smith, R. Silvy N, Lillejoh H and Collisson EW. 2009 An avian oncogenic retrovirus replicates *in vivo* in more than 50% of CD4 and CD8 T lymphocytes from an endangered grouse. Virology 386:380-386.

Abstracts

Singh S, Briles WE, Toro H, Tang, DC, Shi Z, Collisson E. 2009. Evaluation of the CD8 T cell memory response to adenovirus expressing AIV hemagglutinin. Oral presentation. Annual Meeting of the Western Poultry Diseases, Sacramento, CA, March 23-25.

Collisson EW, Briles WE, and Singh S. 2009. Neglected, but critical avian T cell immunity specific for avian influenza virus, First International Scientific Meeting of Anatomy and Physiology Fundamentals of Medicine. Oral presentation. The University Of Zagreb, Faculty of Veterinary Medicine, Zagreb, Croatia, June 12-13th 2009.

Collisson EW. 2009. A non-replicating adenovirus vector induces CD8+ T cell responses to the HA protein. Oral presentation. Second Joint Annual Meeting of the Avian Influenza Cooperative Agricultural Project and the Centers for Excellence for Influenza Research & Surveillance, June 22-25, Minneapolis, MN.

Collisson EW. 2009. An avian influenza education program for families and backyard poultry. Oral presentation. Second Joint Annual Meeting of the Avian Influenza Cooperative Agricultural Project and the Centers for Excellence for Influenza Research & Surveillance, June 22-25, Minneapolis, MN.

Singh S, Drechsler Y, Briles WE, Toro H, & Collisson E. 2009. CD8+ T cell memory responses to the avian influenza virus hemagglutinin expressed by a non-replicating Adenovirus. Oral presentation. Annual Meeting of the American Society for Virology, Vancouver, British Columbia, Canada.