**Refereed Journals**

Council for Agricultural Science and Technology (CAST) [Long., J. H. Blackburn, A. Martin, F. Silversides, R. L. Taylor, Jr., and C. Youngs]. 2019. Protecting food animal gene pools for future generations—A paper in the series on The Need for Agricultural Innovation to Sustainably Feed the World by 2050. Issue Paper 65. CAST, Ames, Iowa.

Nuthalapati, N., J. D. Evans, R. L. Taylor, Jr., S. L. Branton, B. Nanduri, and G. T. Pharr. 2019. Transcriptomic analysis of early B-cell development in the chicken embryo. Poult. Sci. 98:5342-5354 https://doi.org/10.3382/ps/pez354 (published online: June 25, 2019)

Wilson, K.M., D.R. Rodrigues, W.N. Briggs, A.F. Duff, K.M. Chasser, and L.R. Bielke (2019). Evaluation of the impact of *in ovo* administered bacteria on microbiome of chicks through ten days of age. Poult Sci 98: 5949-5960

Sherer ML, Khanal P, Talham G, Brannick EM, Parcells MS, Schwarz JM. 2019. Zika virus infection of pregnant rats and associated neurological consequences in the offspring. PLoS One. 2019 Jun 20;14(6):e0218539. doi:10.1371/journal.pone.0218539. PubMed PMID: 31220154; PubMed Central PMCID: PMC6586346.

Lawrence JH, Sherer ML, Tavlarides-Hontz P, Parcells MS, Schwarz JM. 2019. An investigation into the immune response of cultured neural rat cells following Zika virus infection. J Neuroimmunol. Jul 15;332:73-77. doi:10.1016/j.jneuroim. 04.002. Epub 2019 Apr 3. PubMed PMID: 30959341.

Neerukonda SN, Egan NA, Patria J, Assakhi I, Tavlarides-Hontz P, Modla S, Muñoz ER, Hudson MB, Parcells MS. 2019. Comparison of exosomes purified via ultracentrifugation (UC) and Total Exosome Isolation (TEI) reagent from the serum of Marek's disease virus (MDV)-vaccinated and tumor-bearing chickens. J Virol Methods. Jan; 263:1-9. doi: 10.1016/j.jviromet.2018.10.004. Epub 2018 Oct 11. PubMed PMID: 30316797.

Neerukonda SN, Tavlarides-Hontz P, McCarthy F, Pendarvis K, Parcells MS. 2019. Comparison of the Transcriptomes and Proteomes of Serum Exosomes from Marek's Disease Virus-Vaccinated and Protected and Lymphoma-Bearing Chickens. Genes (Basel). Feb 5;10(2). pii: E116. doi: 10.3390/genes10020116. PubMed PMID: 30764491; PubMed Central PMCID: PMC6410298.

Neerukonda, SN, UK Katneni, N Bhandari and MS Parcells. 2019.Transcriptional Analyses of Innate and Acquired Immune Patterning Elicited by Marek’s Disease Virus Vaccine Strains Herpesvirus of Turkeys (HVT), Marek’s Disease Virus 2 (strain SB1) and Bivalent Vaccines (HVT/SB1) and (HVT-LT/SB1). Avian Diseases (*in press*).

Conradie, AM, LD Bertzbach, N Bhandari, M Parcells and BB Kaufer. 2019. A common live-attenuated avian herpesvirus vaccine encodes a very potent oncogene. mSphere (*in press*).

Johnson, C., Kogut, M., Genovese, K., He, H., Kazemi, S., Arsenault, R. 2019. Administration of a postbiotic causes immunomodulatory responses in broiler gut and reduces disease pathogenesis following challenge. *Microorganisms*. 7(8): 268.

He, H., Arsenault, R.J., Genovese, K., Swaggerty, C., Johnson, C., Nisbet, D., Kogut, M.H. 2019. Inhibition of calmodulin increases intracellular survival of Salmonella in chicken macrophage cells. *Veterinary Microbiology*. 232: 156-161.

Pagano, G., Johnson, C., Hahn, C., and Arsenault, R.J. 2018. A new tool for studying waterfowl immune and metabolic responses: molecular level analysis using kinome profiling. *Ecology and Evolution*. 8(16): 8537-8546.

He, H., Arsenault, R.J., Genovese, K.J., Johnson, C., and Kogut, M.H. 2018. Chicken macrophages infected with Salmonella (S.) Enteritidis or S. Heidelberg produce differential responses in immune and metabolic signaling pathways. 195: 46-55. *Veterinary Immunology and Immunopathology*.

Walugembe M, Mushi JR, Amuzu-Aweh EN, Chiwanga GH, Msoffe PL, Wang Y, Saelao P, Kelly T, Gallardo RA, Zhou H, Lamont SJ, Muhairwa AP, Dekkers JCM. 2019. Genetic Analyses of Tanzanian Local Chicken Ecotypes Challenged with Newcastle Disease Virus. Genes (Basel). 2019 Jul 17;10(7). pii: E546. doi: 10.3390/genes10070546.

Egaña-Labrin, S. R. Hauck, A. Figueroa, S. Stoute, H.L. Shivaprasad, M. Crispo, C. Corsiglia, H. Zhou, C. Kern, B. Crossley, R. Gallardo. 2019. Genotypic Characterization of Emerging Avian Reovirus Molecular Variants in California. Sci Rep Accepted.

Saelao, P., Y. Wang, G. Chanthavixay, J. Dekkers, R. Gallardo, A. Wolc. T.R. Kelly, S.J. Lamont. Zhou, H. 2019. Genetics and Genomic Regions Affecting Response to Newcastle Disease Virus Infection under Heat Stress in Layer Chickens. Genes (Basel). 2019 Jan 18;10(1). pii: E61. doi: 10.3390/genes10010061.

Cadena M, Froenicke L, Britton M, Settles ML, Durbin-Johnson B, Kumimoto E, Gallardo RA, Ferreiro A, Chylkova T, Zhou H, Pitesky M. 2019. Transcriptome analysis of Salmonella Heidelberg after exposure to cetylpyridinium chloride, acidified calcium hypochlorite, and peroxyacetic acid. Journal of Food Protection, Vol. 82, No. 1, 2019, Pages 109–119 doi:10.4315/0362-028X.JFP-18-235

Rowland K, Saelao P, Wang Y, Fulton JE, Liebe GN, McCarron AM, Wolc A, Gallardo RA, Kelly T, Zhou H, Dekkers JCM, Lamont SJ. 2018. Association of Candidate Genes with Response to Heat and Newcastle Disease Virus. Genes (Basel). 9(11). pii: E560. doi: 10.3390/genes9110560.

Litvak Y., K.K.Z. Mon, H. Nguyen, G. Chanthavixay, M. Liou, E. M. Velazquez, L. Kutter, M. A. Alcantara, M. X. Byndloss, C.R. Tiffany, G. T. Walker, F. Faber, Y. Zhu, D. N. Bronner, A. J. Byndloss, R. M. Tsolis, H. Zhou. A. J. Baumler. 2019. Commensal Enterobacteriaceae protect against Salmonella colonization by competing for oxygen. Cell Host & Microbe 25, 1-12https://doi.org/10.1016/j.chom.2018.12.003

Silva APD, Hauck R, Kern C, Wang Y, Zhou H, Gallardo RA. 2019 Effects of Chicken MHC Haplotype on Resistance to Distantly Related Infectious Bronchitis Viruses. Avian Dis. 63(2):310-317. doi: 10.1637/11989-103118-Reg.1.

Saelao, P., Y. Wang, G. Chanthavixay, V. Yu, J. Dekkers, R. Gallardo, T.R. Kelly, S.J. Lamont. Zhou, H. 2018. Integrated proteomic and transcriptomic analysis of differential expression of chicken lung tissue in response to NDV infection during heat stress. Genes 9, 579; doi:10.3390/genes9120579.

Erf, G. F. 2019. Multifactorial, non-communicable diseases in poultry: the importance of conserving genetic models for autoimmune diseases. 68th Annual National Breeders Roundtable, St. Louis, MO: pp 1-7.

Sigmon, C., R.D. Malheiros, K. Anderson, J.A. Payne, and R.B. Beckstead. 2019. Blackhead disease: Recovery of layer flock after disease challenge. J Applied Poult. Res. In press.

Cupo, K.L., and R.B. Beckstead. 2019. An in vitro assay of disinfectants on the viability of *Heterakis gallinarum* eggs. Avian Dis. In press.

Cupo, K.L., and R.B. Beckstead. 2019. PCR detection of *Heterakis gallinarum* in environmental samples. Vet. Parasitol. 271:1-6.

Cupo, K.L., and R.B. Beckstead. 2019. *Heterakis gallinarum*, the cecal nematode of gallinaceous birds: A critical review. Avian Dis. Accepted.

Renu, S., Markazi, A. D., Dhakal, S., Lakshmanappa, Y. S., Gourapura, S. R., Shanmugasundaram, R., . . . Renukaradhya, G. J. (2018). Surface engineered polyanhydride-based oral Salmonella subunit nanovaccine for poultry. Int J Nanomedicine, 13, 8195-8215. doi:10.2147/IJN.S185588

Selvaraj, R., Shamugasundaram, R., & morris, A. (2018). Effect of 25-hydroxycholecalciferol supplementation on turkey performance and immune cell parameters in a coccidial infection model. Poultry Science. doi:10.3382/ps/pey480

Shanmugasundaram, R., Morris, A., & Selvaraj, R. (2018). Effect of 25-hydroxycholecalciferol supplementation on turkey performance and immune cell parameters in a coccidial infection model. Poultry Science, pey480. doi:10.3382/ps/pey480

Markazi, A., Luoma, A., Shanmugasundaram, R., Mohnl, M., Raj Murugesan, G., & Selvaraj, R. (2018). Effects of drinking water synbiotic supplementation in laying hens challenged with *Salmonella*. Poultry Science, 97(10), 3510-3518. doi:10.3382/ps/pey234

Renu, S., Markazi, A. D., Dhakal, S., Lakshmanappa, Y. S., Gourapura, S. R., Shanmugasundaram, R., . . . Renukaradhya, G. J. (2018). Surface engineered polyanhydride-based oral *Salmonella* subunit nanovaccine for poultry. Int J Nanomedicine, 13, 8195-8215. doi:10.2147/IJN.S185588

Selvaraj, R., Shamugasundaram, R., & morris, A. (2018). Effect of 25-hydroxycholecalciferol supplementation on turkey performance and immune cell parameters in a coccidial infection model. Poultry Science. doi:10.3382/ps/pey480

Shanmugasundaram, R., Morris, A., & Selvaraj, R. (2018). Effect of 25-hydroxycholecalciferol supplementation on turkey performance and immune cell parameters in a coccidial infection model. Poultry Science, pey480. doi:10.3382/ps/pey480

Markazi, A., Luoma, A., Shanmugasundaram, R., Mohnl, M., Raj Murugesan, G., & Selvaraj, R. (2018). Effects of drinking water synbiotic supplementation in laying hens challenged with *Salmonella*. Poultry Science, 97(10), 3510-3518. doi:10.3382/ps/pey234

T.V.L. Berghof, J.A.J. Arts, H. Bovenhuis, A. Lammers, J.J. vander Poel, H.K. Parmentier. Antigen- dependent effects of divergent selective breeding on natural antibodies on specific humoral immune responses in chickens. Vaccine 36: 1444-1452, 2018

T.V.L. Berghof, M.H.P.W. Visker, J.A.J. Arts, H.K. Parmentier, J.J. van der Poel, A.L.J. Vereijken, H. Bovenhuis. Genomic region containing Toll-like receptor genes has a major impact on total IgM antibodies Including KLH-binding IgM natural antibodies in chickens. Front. Immunol. January 2018 doi: 10.3389/fimmu.2017.01879

M. Bao, H.K. Parmentier, M.G.B. Nieuwland, J.J. van der Poel, H. Bovenhuis. Identification of a genomic region associated with IgM antibodies binding autoantigens in healthy chickens. Dev. Comp. Immunol. Submitted June 2019.

M. Rifqi Ismirar, J.A.J. Arts, H.K. Parmentier. Maternal transfer of natural (auto-)antibodies in chicken. Poultry Sci. 2019. 12 <http://dx.doi.org/10.3382/ps/pez017>

T.V.L. Berghof, M.G.R. Matthijs, J.A.J. Arts, H. Bovenhuis, R.M. Dwars, J.J. van der Poel, M.H.P.W. Visker, H.K. Parmentier. Selective breeding for high natural antibody level increases resistance to avian pathogenic *Escherichia coli* (APEC) in chickens. Dev. Comp. Immunol. 93: 45–57, 2019

J. van der Eijck, M. Verwoolde, G. de Vries Reilingh, B. Rodenburg, A. Lammers. Chickens divergently selected on feather pecking differ in immune characteristics. Physh. Behav. In press, 2019.

N. Mayasari, E. Trevisi, A. Ferrari, B. Kemp, H.K. Parmentier, A.T.M. van Knegsel. Relationship between inflammatory biomarkers and oxidative stress with uterine health in dairy cows with different dry period lengths. Transl. Anim. Sci. Doi: 10.1093/tas/txz040, 2019

J. Cordero-Solorzano, H.K. Parmentier, J.A.J. Arts, J. van der Poel, D-J. de Koning, H. Bovenhuis. Genome-wide association study identifies loci influencing natural antibody titers in milk of Dutch Holstein-Friesian cattle. J. Dairy Sci. In press, 2019

K.S.E. van Dijk, H.K. Parmentier. Transfer of natural auto-antibodies via egg yolk in chickens divergently selected for natural antibodies binding keyhole limpet hemocyanin. Dev. Comp. Immunol. In press, 2019

Walugembe, M. Mushi, J., Amuzu-Aweh, E., Chiwanga, G., Msoffe, P., Wang, Y., Saelao, P., Kelly, T., Gallardo, R., Zhou, H., Lamont, S., Muhairwa, A., Dekkers. J. 2019. Genetic analyses of Tanzania local chicken ecotypes challenged with Newcastle disease virus. Genes 10, 546; doi:10.3390/genes10070546

Schilling, M., Memari, S., Cavanaugh, M., Katani, R., Deist, M.S., Radzio-Basu, J., Lamont. S.J., Buza, J.J., and Kapur, V. 2019. Conserved, breed-dependent, and subline- dependent innate immune responses of Fayoumi and Leghorn chicken embryos to NDV infection. Scientific Reports *9:7209* doi.org/10.1038/s41598-019-43483-1

Saelao, P., Wang, Y., Chanthavixay, G., Gallardo, R.A., Wolc, A., Dekkers, J.C.M., Lamont, S.J., and Zhou, H. 2019. Genetics and genomic regions affecting response to Newcastle disease virus infection under heat stress in layer chickens. Genes *10*(1), 61; <https://doi.org/10.3390/genes10010061>

Saelao, P. Wang, Y. Chanthavixay, G., Yu, V., Gallardo, R.A., Lamont, S.J., Dekkers, J.M., Kelly, T., Zhou, H. 2018. Integrated proteomic and transcriptomic analysis of differential expression of chicken lung tissue in response to NDV infection during heat stress. GENES *9*, 579; doi:10.3390/genes9120579

Rowland, K., Saelao, P., Wang, Y., Fulton, J.E., Liebe, G. N., McCarron., A.M., Wolc, A., Gallardo, R.A., Kelly, T., Zhou, H., Dekkers, J.C.M., and Lamont, S.J. 2018. Association of candidate genes with response to heat and Newcastle disease virus. GENES 9, 560; doi:10.3390/genes9110560

Zhang J, Goto RM, Honaker CF, Siegel PB, Miller MM. 2019. Distribution of haplotypes within selected chicken lines suggests MHC-*Y* contributes to the genetics underlying heritable high and low antibody responses. Plant and Animal Genome Meeting XXVIII, San Diego CA, January 13-15, 2019.

Miller MM, Zhang J, Warden C, Goto RM. 2019. Progress in revealing MHC-*Y* diversity and function in fhickens. Plant and Animal Genome Meeting XXVIII, San Diego CA, January 13-15, 2019.

Zhang J, Goto RM, Honaker CF, Siegel PB, Miller MM. 2019. Segregation of chicken MHC-*Y* haplotypes in high and low antibody selected lines provides evidence that MHC- *Y* contributes to the genetics of immune responses. AAI Meeting, May 9-13, 2019.

Goto RM, Gugiu G, Zhang J, Stadtmueller B, Bjorkman PJ, Miller MM. 2019. Polymorphism in chicken MHC-Y class I molecules that bind lipid ligands. AAI Meeting, May 9-13, 2019.

A.P. Da Silva, K.A. Schat, R.A. Gallardo. Cytokine responses in tracheas from MHC congenic chicken lines with distinct susceptibilities to infectious bronchitis virus. 2019. Avian Dis. Submitted.

F. Saiada, R.A. Gallardo, H.L. Shivaprasad, C. Corsiglia, V.L. van Santen. Intestinal tropism of an IBV isolate not explained by Spike protein binding specificity. 2019. Avian Dis. Submitted

S. Egaña-Labrin, R. Hauck, A. Figueroa, S. Stoute, H. L. Shivaprasad, M. Crispo, C. Corsiglia, H. Zhou, C. Kern, B. Crossley, **R. A. Gallardo.** Genotypic Characterization of Emerging Avian Reovirus Molecular Variants in California. 2019. Sci. Reports. 9:9351. https://[www.nature.com/articles/s41598-019-45494-4](http://www.nature.com/articles/s41598-019-45494-4)

Crispo, S. Stoute, R. Hauck, S. Egaña-Labrin, C. G. Sentíes-Cué, G. L. Cooper, A. A. Bickford, C. Corsiglia, H. L. Shivaprasad, B. Crossley and R. A. Gallardo. Partial Molecular Characterizationand Pathogenicity Study of an Avian Reovirus Causing Tenosynovitis in Commercial Broilers. Avian Dis. 2019. In press. https://[www.aaapjournals.info/doi/pdf/10.1637/12013-121418-Reg.1](http://www.aaapjournals.info/doi/pdf/10.1637/12013-121418-Reg.1)

Da Silva A.P., R. Hauck, C. Kern, Y. Wang, H. Zhou, **R.A. Gallardo**. Effects of Chicken MHC Haplotype on Resistance to Distantly-Related Infectious Bronchitis Viruses. 2019. Avian Dis. 63:2, 310-317. https://[www.aaapjournals.info/doi/pdf/10.1637/11989-103118-Reg.1](http://www.aaapjournals.info/doi/pdf/10.1637/11989-103118-Reg.1)

**Book Chapters**

Hauck, R.; Bielke, L.; Yu, Z (2019). The interaction between gut microbiota and pathogens in poultry. Improving gut health in poultry Location: Burleigh Dodds Science Publishing, in print

Erf, G. F., and I. C. Le Poole. 2019. Animal Models; in: Vitiligo, 2nd edition. M. Picardo and A. Taieb, editors; Springer, SPi Global pp 205-223.

Webb, K. C., S. W. Henning, G. F. Erf, and I. C. Le Poole. 2019. Autoimmune Pathology of Vitiligo; in: Vitiligo, 2nd edition. M. Picardo and A. Taieb, editors; Springer, SPi Global pp 285-301.

**Presentations**

Chasser, K.; McGovern, K.; Duff, A.; Graham, B. et al.. (2019). Effect of select Gram-negative enteric strains on inflammation in chicks. Poultry Science Association Annual Meeting, July 2019

Duff, A.; Baxter, M.; Chasser, K.; Briggs, W. et al.. (2019). Mode of action of dexamethasone is not microbial dependent. Poultry Science Association Annual Meeting, July 2019.

Briggs, W.; Rodrigues, D.; Wilson, K.; Duff, A. et al.. (2019). Impact of intestinal pioneer colonizers on inflammation in broiler chicks at ten days of age. Poultry Science Association Annual Meeting, July 2019

Duff, A.; Searer, K.; Briggs, W.; Wilson, K. et al.. (2019). Novel subunit vaccine targeting Clostridium perfringens mucinases for control of necrotic enteritis in broilers. International Poultry Scientific Forum, February 2019

Trombetta, M.; Wilson, K.; Rodrigues, D.; Briggs, W. et al.. (2019). Enteric proteomic endocrine pathway changes to day of hatch chicks after in ovo bacterial inoculation. International Poultry Scientific Forum, February 2019

Chasser, K.; Wilson, K.; Rodrigues, D.; Briggs, W. et al.. (2019). Influence of enteric pioneer colonizers on canonical metabolic pathways in day of hatch chicks. International Poultry Scientific Forum, February 2019

Winson, E.; Rodrigues, D.; Wilson, K.; Briggs, W. et al.. (2019). Change to gut microbiome through ten days of age affected by pioneer colonizing bacteria. International Poultry Scientific Forum, February 2019

K.M. Chasser, K.M. Wilson, D. Russi-Rodrigues, W. Bottje, A.F. Duff, W.N. Briggs, and L.R. Bielke (2019) Influence of enteric pioneer colonizers on cell growth and metabolism in day of hatch chicks. International Conference on Poultry Intestinal Health, Rome, Italy, April 2019

Aylward, B., Johnson, C., Perry, F., Admasu, I., Whelan, R., and Arsenault, R. CpG injection on day 15 post-hatch leads to metabolic changes on day 16 post-hatch in modern broilers and adaptive immune responses in a heritage breed. Poultry Science Association Annual Meeting; 2019 July 15-18; Montreal, QC, Canada.

Perry, F., Johnson, C., and Arsenault, R. The role of mTOR in Salmonella invasion of macrophages. Poultry Science Association Annual Meeting; 2019 July 15-18; Montreal, QC, Canada.

Johnson, C., Neerukonda, S., Ladman, B., Aylward, B., and Arsenault, R. Low pathogenic avian influenza virus influences immune response in the digestive tract of mallard ducks. Poultry Science Association Annual Meeting; 2019 July 15-18; Montreal, QC, Canada.

Aylward, B., and Arsenault, R.J. An immunostimulatory injection on day of hatch leads to altered cellular signaling later in the grow out period in modern broiler birds. International Poultry Scientific Forum; 2019 February 11-12; Atlanta, GA

Perry, F., and Arsenault, R.J., Immunometabolic Influences of Salmonella Enteritidis and Salmonella Heidelberg in Chicken Macrophages. International Poultry Scientific Forum; 2019 February 11-12; Atlanta, GA

Van Every, H.A., Aylward, B., Arsenault, R.J., Schmidt, C.J. Integrated -Omics Analysis of Liver in the Post-hatch Broiler Chick. 7th International Symposium on Animal Functional Genomics; 2018 November 12-15; Adelaide, Australia.

Aylward, B., Johnson, C., Kogut, M., Kazemi, S., Arsenault, R. A post-biotic feed additive shows anti-inflammatory effects on immunometabolic signaling in broiler intestinal tissues. Symposium on Gut Health in Production of Food Animals; 2018 November 5-7; St. Louis, MO.

Johnson, C., Aylward, B., Whelan, R., Arsenault, R.J. Comparison of modern and heritage broiler strain’s responses to CpG using immunometabolic analysis of gut tissue. Avian Immunology Research Group Annual Meeting; 2018 September 5-7; Oxford, UK.

Johnson, C., Kogut, M.H., Arsenault, R.J. Fermentation metabolite product given in drinking water imparts an immune effect on broiler chickens. Avian Immunology Research Group Annual Meeting; 2018 September 5-7; Oxford, UK.

Chanthavixay, K., C. Kern, Y. Wang, Saelao, P., R. Gallardo, S.J. Lamont. N. Chubb, G. Rincon, Zhou, H. 2019. Differential H3K27ac peaks within bursa tissue of two inbred chicken lines under NDV infection and heat stress. 37th Conference for the International Society of Animal Genetics, Lleida, Spain.

Walugembe, M., E.N. Amuzu-Aweh, B.B. Kayang, A.P. Muhairwa, P.K. Botchway, J.R. Mushi, G. Honorati, A. Naazie, G. Aning, P. Msoffe, Y. Wang, P. Saelao, T.R. Kelly, R.A. Gallardo, H. Zhou, S.J. Lamont and J.C.M. Dekkers. 2019. Genetic Analyses of Ghana and Tanzania Local Chicken Ecotypes Challenged with Newcastle Disease Virus. Plant & Animal Genome XXVII, San Diego, CA.

Kim, T. H., C. Kern, H. Zhou. 2019. Transcription Factor IRF7 Knockout Revealed Selective Modulation of Type I Interferon Response to Avian Influenza Virus Infection in Chickens. Plant & Animal Genome XXVII, San Diego, CA.

Zhou, H. S.J. Lamont, J.C.M. Dekkers, R. Gallardo, T.R. Kelly, B.B. Kayang, A. Naazie, G. Aning, P. Msoffe and A.P. Muhairwa. 2019. Improving Food Security in Africa by Enhancing Resistance to Newcastle Disease and Heat Stress in Chickens (Genomics to Improve Poultry Innovation Lab). Plant & Animal Genome XXVII, San Diego, CA.

Wang, Y. Saelao, P., K. Chanthavixay, K. Rowland. T.R. Kelly, J.M. Dekkers, A. Wolc. R. Gallardo, S.J. Lamont. Zhou, H. 2019. Association Analysis with 600K SNP Array Identifies Candidate Genes for Heat Stress Response in Hy-Line Brown Chicks. Plant & Animal Genome XXVII, San Diego, CA.

K. Chanthavixay, C. Kern, Y. Wang, Saelao, P., R. Gallardo, S.J. Lamont. N. Chubb, G. Rincon, Zhou, H. 2019. Predicting Chromatin States to Identify Distinct Active Enhancers Within Bursa Tissue of Two Inbred Chicken Lines Under NDV Infection and Heat Stress. Plant & Animal Genome XXVII, San Diego, CA.

K. Chanthavixay, C. Kern, Y. Wang, Saelao, P., R. Gallardo, S.J. Lamont. N. Chubb, G. Rincon, Zhou, H. 2019. Differential H3K27ac peaks within bursa tissue of two inbred chicken lines under NDV infection and heat stress. Keystone conference in Transcription and RNA Regulation in Inflammation and Immunity, Lake Tahoe, CA

Kim, T. H., C. Kern, H. Zhou. 2019. Transcription Factor IRF7 Knockout Revealed Selective Modulation of Type I Interferon Response to Avian Influenza Virus Infection in Chickens. Plant & Animal Genome XXVII, San Diego, CA.

R.A. Gallardo, A.P. Da Silva, H. Zhou, C. Kern. (2018). Tracheal Immune Pathways and itsVirome in Chickens Challenged with Different IBV Genotypes. merican Veterinary Medical Association / American Association of Avian Pathologists (AVMA/AAAP) Annual Meeting,Denver, CO.

R.A. Gallardo, A.P. Da Silva, S. Egaña, S. Stoute, A. Mete, C, K. Clothier, C. Corsiglia, G. Cutler, C. Kern, H. Zhou. Coryza Outbreaks in Chickens: Persistence, Molecular and Pathogenic Characterization. (2018). American Veterinary Medical Association / American Association of Avian Pathologists (AVMA/AAAP) Annual Meeting, Denver, CO.

S. Egaña, H. Roh, H. Zhou, C. Corsiglia, B. Crossley, R.A. Gallardo. Attempts Towards a Better Classification of Avian Reovirus Variants. (2018). 67th Western Poultry Disease Conference (WPDC) Salt Lake City, UT.

R.A. Gallardo, C. Corsiglia, S. Stoute, A. Mete, A.P. Da Silva, K. Clothier, C. Kern, H. Zhou. (2018). Understanding Coryza Outbreaks, Persistence and Molecular Biology. 67th Western Poultry Disease Conference (WPDC) Salt Lake City, UT.

R. A. Gallardo, A. P. da Silva, K.A. Schat, R. Hauck, Y. Wang, H. Zhou (2018). Understanding Immune Responses Against Infectious Bronchitis Virus Challenges Using Resistant and Susceptible Chicken Lines. International Avian Respiratory Disease Conference (IARDC). Athens, GA.

Communication and control of host immunity through the gut microbiome of poultry. 2nd Microbiome Movement – Animal Health & Nutrition. St. Louis, MO. October 2019 (International meeting).

Bug on Bug Violence: Can We Manipulate the Microbiome of Poultry To Control Food Borne Disease? Microbiomes of Agricultural and Food Systems Symposium at the ASM Microbe 2019. San Francisco, CA. June 2019. (International meeting)

Animal Gut Microbiome research - When will it deliver? 6th AFBI initiated International Fall Forum. Belfast, UK. November 2018. (International meeting)

Improving Poultry Health through the Intestinal Microbiota. Poultry Medicine Seminar Series. College of Veterinary Medicine, NC State University. Raleigh NC. September 16, 2019. (Local)

Host-microbiome interactions in the bird. Trying to connect metabolites to systemic immunity. Microbiome Monthly Meetup. NC State University. Raleigh NC. April 4, 2019. (Local)

Science in a Flash: How to give a successful flash talk. ASBMB Webinar. March 4, 2019.

Pathogenesis and resistance to astrovirus infections in turkeys. AFBI Veterinary Division, Belfast, Northern Ireland, UK. November 2018. (International)

Selvaraj, R. (2018). Control of Foodborne Pathogens through Nutrition and Vaccines. In 2018 Mini Summit Safety and Quality Risk analysis in Fresh Food Chain. Shanghai Academy of Agriculture Sciences, Shanghai, P. R. China (International, Invited)

Selvaraj, R. (2018). Probiotics and salmonella; Zinc and SOD; *Salmonella* Nanoparticle vaccine; Prostate Cancer research. In NE1834 Genetic Bases for Resistance and Immunity to Avian Diseases. Morgan town, WV (Regional)

Selvaraj, R. (2018). Effect of Synbiotic Supplementation on *Salmonella* load in Birds Induced with *Salmonella*. In International Scientific Association for Probiotics and Prebiotics (ISAPP). Singapore, Singapore (International)

Selvaraj, R. (2018). Immune System of Poultry. In Boehringer Ingelheim Poultry Course (Dr. Casey was the organizer). Watkinsville, GA (International)

Selvaraj, R. (2018). Intestinal Mucosa- A new target organ to improve performance in poultry. In AVECAO 2018. Tepatiilan, Jalisco, Mexico

International, Keynote/Plenary, Invited

Selvaraj, R. (2018). *Salmonella* *enetrica* serovar Heidelberg infection on chicken T regulatory cell properties. In CRWAD 2018. Chicago, IL (National)

PAG 2019: Drechsler Y, Hawkins D: Epigenetic Mapping of the Chicken Genome: Implications for Disease Resistance and Production

PAG 2019: Drechsler Y, Hawkins D: Epigenomic Landscapes from Various Cells and Tissues of *Gallus* *gallus*

**Abstracts**

Taylor, R. L., Jr. and R. T. Kopulos. 2019. Non-Mhc background genes increase Rous sarcoma progression in major histocompatibility (B) complex genotype B24B24. Poult. Sci. 98(E-Suppl. 1):97

Zhang, J., R. M. Goto, C. F. Honaker, P. B. Siegel, R. L. Taylor, H. K. Parmentier, and M. M. Miller. 2019. Segregation of chicken MHC-Y haplotypes in high and low antibody selected lines provides evidence that MHC-Y contributes to the genetics of immune responses. J. Immunol. 202(Suppl. 1):73.8

Microbiological Systems Symposium: Parcells, M.S., S.N. Neerukonda, P. Tavlaridez-Hontz, F. McCarthy, and K. Pendarvis. 2019. The Role of Exosomes in Marek’s Disease. Presentation. February 6, 2019.

One Health Symposium: Parcells, M.S., J. Patria, N. Bhandari, P. Tavarides-Hontz, C. Cao, R. Dreeman, D. Angeles, and P. Dhurjati. 2019. Modeling Marek’s disease virus infection I: virus replication in the spleen. Presentation. April 30, 2019

Patria, J.N., N. Bhandari, P. Tavlarides-Hontz, A. M. Conradie, B. B. Kaufer, and M. S. Parcells. 2019. Inntate Selection of Mutations in the Meq Oncoprotein of Marek’s Disease Virus. Poster. April 30, 2019

Undergraduate Research Symposium: Gollhardt, E., and M. S. Parcells. 2019. Analysis of the Effects of Exosomes from Chicken Serum on Macrophage Signaling. Poster. Undergraduate Research Symposium. August 15, 2019.

O’Connell, B.A., and M. S. Parcells. 2019. Interaction of Marek’s Disease Virus (MDV) with Innate Immune Sensors and Signaling. Poster. Undergraduate Research Symposium. August 15, 2019.

Wooten, K., P. Tavlarides-Hontz, E. Gollhardt, and M. S. Parcells. 2019. Analysis of Metabolic Manipulation by Marek’s Disease Virus (MDV). Poster. Undergraduate Research Symposium. August 15, 2019.

91st  NECAD, Penn State University, September 11- - 12, 2019 Patria, J., N. Bhandari, P. Tavlarides-Hontz, A. M. Conradie, B. Kaufer and M. S. Parcells. 2019. Innate Selection of Mutations in the Meq Oncoprotein of Marek’s Disease Virus. p. 24. Proceedings of the 91st Northeastern Conference on Avian Diseases, Penn State University, Sept. 11, 2019.

Aylward, B., Johnson, C., Perry, F., Admasu, I., Whelan, R., and Arsenault, R. CpG injection on day 15 post-hatch leads to metabolic changes on day 16 post-hatch in modern broilers and adaptive immune responses in a heritage breed. Poultry Science Association Annual Meeting; 2019 July 15-18; Montreal, QC, Canada.

Perry, F., Johnson, C., and Arsenault, R. The role of mTOR in *Salmonella* invasion of macrophages. Poultry Science Association Annual Meeting; 2019 July 15-18; Montreal, QC, Canada.

Johnson, C., Neerukonda, S., Ladman, B., Aylward, B., and Arsenault, R. Low pathogenic avian influenza virus influences immune response in the digestive tract of mallard ducks. Poultry Science Association Annual Meeting; 2019 July 15-18; Montreal, QC, Canada.

Aylward, B., and Arsenault, R.J. An immunostimulatory injection on day of hatch leads to altered cellular signaling later in the grow out period in modern broiler birds. International Poultry Scientific Forum; 2019 February 11-12; Atlanta, GA

Perry, F., and Arsenault, R.J., Immunometabolic Influences of Salmonella Enteritidis and Salmonella Heidelberg in Chicken Macrophages. International Poultry Scientific Forum; 2019 February 11-12; Atlanta, GA

Van Every, H.A., Aylward, B., Arsenault, R.J., Schmidt, C.J. Integrated -Omics Analysis of Liver in the Post-hatch Broiler Chick. 7th International Symposium on Animal Functional Genomics; 2018 November 12-15; Adelaide, Australia.

Aylward, B., Johnson, C., Kogut, M., Kazemi, S., Arsenault, R. A post-biotic feed additive shows anti-inflammatory effects on immunometabolic signaling in broiler intestinal tissues. Symposium on Gut Health in Production of Food Animals; 2018 November 5-7; St. Louis, MO.

Johnson, C., Aylward, B., Whelan, R., Arsenault, R.J. Comparison of modern and heritage broiler strain’s responses to CpG using immunometabolic analysis of gut tissue. Avian Immunology Research Group Annual Meeting; 2018 September 5-7; Oxford, UK.

Johnson, C., Kogut, M.H., Arsenault, R.J. Fermentation metabolite product given in drinking water imparts an immune effect on broiler chickens. Avian Immunology Research Group Annual Meeting; 2018 September 5-7; Oxford, UK.

Rodriguez, A. E., J. Z. Hiltz, M. A. Sales, S. K. Orlowski, N. B. Anthony, and G. F. Erf. 2019. Re-characterization of immune function and immunopathology of the UCD-200/206 chicken line after successful re-establishment: innate response. 68th Breeders Roundtable, St. Louis, MO. (2nd place award winning poster presentation).

Erf, G. F., M. A. Sales, C. E. Ellington\*. 2019. Intradermal injection of lipopolysaccharide and peptidoglycan in chickens results in divergent leukocyte infiltration profiles. Poult. Sci. 98 (E-Suppl. 1): in press.

Falcon, D. M.\*, M. A. Sales, and G. F. Erf. 2019. Melanocyte-specific TH1-like initiating- and recall-responses in growing feathers of Smyth chickens with autoimmune vitiligo. Pigm. Cell & Melanoma Res. (in press)

Sales, M. A., and G. F. Erf. 2019 The target tissue in the Smyth line chicken model for spontaneous autoimmune vitiligo: relevance and opportunities for studies on disease etiology, progression and treatment. Pigm. Cell & Melanoma Res. (in press)

Cupo, K., and R.B Beckstead. 2018. Molecular detection of Heterakis gallinarum in earthworms and darkling beetles. Annual Meeting of Poultry Science Association.

 Cupo, K., J. Payne, and R.B. Beckstead. 2018. The role of enteric inflammation and loose stool on the rate of *Histomonas meleagridis* transmission. International Poultry Scientific Forum.

 Sigmon, C., R.B. Beckstead, and K. Anderson K. 2018. The effect of an early infection of *Histomonas meleagridis* on layer performance. International Poultry Scientific Forum.

 Keen, K.G., and R.B Beckstead RB. 2018. *Cochlosoma anatis*: prevalence in healthy and diseased turkey flocks. 12 International Symposium on Turkey Diseases.

 Payne, J., K. Cupo, E.V. Chadwick, and R.B. Beckstead. 2018. Factors that influence direct infection and lateral transmission of blackhead disease in the turkey. 12 International Symposium on Turkey Diseases.

Keen, K.G., and R.B. Beckstead. 2019. Characterization of growth performance changes and lesion development in commercial toms infected with intestinal parasite *Tetratrichomonas gallinarum*. International Poultry Scientific Forum.

Ferrarini, A., and R.B. Beckstead. 2019. Genetic resistance to blackhead disease in commercial turkeys. International Poultry Scientific Forum.

Fudge, C., E.V. Chadwick, and R.B. Beckstead. 2019. *Histomonas meleagridis* oral inoculation of fed and fasted turkeys fail to cause blackhead disease. International Poultry Scientific Forum.

Chadwick, E.V., F. Edens, D. Ellis D, and R.B. Beckstead. 2019. Microbiota shifts and histopathology of the turkey ceca during early *Histomonas meleagridis* infection. Annual Meeting of Poultry Science Association.

Chadwick, E.V., R.D. Malheiros, E.O. Oviedo, C. Sigmon, M.C.A. Wisaquillo, G.A. Quintana-Ospina, V.S.M. Hernan, A. Cordova-Noboa, and R.B. Beckstead. 2019. Effect of Histomonas meleagridis on broiler breeder egg production and quality. Annual Meeting of Poultry Science Association.

Malheiros, R.D., K.L. Cupo, R.B. Beckstead, and K.E. Anderson. 2019. Impact of direct fed microbial on gut health and intestinal worm populations from free-range hens in the late cycle. European Symposium on Poultry Nutrition.

Selvaraj, R., Mortada, M., Shanmugasundaram, R., & murugesan, R. (2019). In vitro and in vivo assessment of probiotics as an on-farm control strategy against Campylobacter jejuni in Broilers. In Introduction to the IPPE International Production & Processing Expo (IPPE)

Selvaraj, R., Akerele, G., & Gourapura, R. (2019). Characterizing and assessing the safety and Immunogenicity of chitosan and polyanhydride nanoparticle vaccines loaded with Clostridium perfringens antigens

Selvaraj, R., & ng, T. (2019). Effects of glycinated zinc on host immune response to necrotic enteritis in broilers. In International Production & Processing Expo (IPPE)

Selvaraj, R., Acevedo Villanueva, K., & gourapura, R. (2019). Efficacy of chitosan based nanoparticle vaccine administration in broiler birds challenged with Salmonella enterica serovar enteritidis. In International Production & Processing Expo (IPPE)

Selvaraj, R., & Oxford, J. (2019). Effects of glutamine supplementation on broiler performance and intestinal immune parameters during an experimental coccidiosis infection. In International Production & Processing Expo (IPPE)

Selvaraj, R., Lester, B., & Gourapura, R. (2019). Mucosal immunity of the broiler chicken vaccinated with nanoparticle vaccine and challenged with *Salmonella* *enterica* Enteritidis. In International Production & Processing Expo (IPPE)

Selvaraj, R. (2018). Application of vaccines in the era of antibiotic free poultry production. In Poult. Sci. 97(E-Suppl. 1) 571S. San Antonio, TX

**Thesis/Dissertation Completed:**

S.N. Neerukonda, Ph.D. Dissertation: Vaccine-induced Innate Immune Responses and Examination of Exosomes in Marek’s Disease Virus (MDV) Pathogenesis and Vaccination. August 2018.

N.A. Egan, M.S. Thesis: The role of Polycomb Repressive Complex Proteins in Marek’s Disease Virus (MDV) Latency and Lymphomagenesis. July 2018.

“The Immunometabolic Responses *Salmonella* Enteritidis and *Salmonella* Heidelberg Induce in Chicken Macrophages” Famatta Perry, Masters of Science Thesis. 2019. University of Delaware. Supervisor: Ryan J. Arsenault

Hiltz, J. Z. 2019. Rescue and reestablishment of chicken models for spontaneously occurring Hashimoto’s thyroiditis and systemic sclerosis/scleroderma. Master of Science Thesis, University of Arkansas, Fayetteville, AR.

Katherine Cupo. 2018. A diagnostic PCR protocol for identifying *Heterakis gallinarum* in environmental samples.

Kelly Grace Keen. 2019. Effect of *Tetratrichomonas gallinarum* on production parameters in commercial turkeys and development of a *Cochlosoma anatis* infection model.