

Curriculum Vitae
Phillip C. Gauger, DVM, MS, PhD
Assistant Professor

OFFICE ADDRESS

1575 Veterinary Medicine
IA State University
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RANK

Associate Professor: Department Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State University, Ames, IA 50011

EDUCATION AND TRAINING

2012 – 2016 Assistant Professor: Department Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State University, Ames, IA 50011
2008 – 2012 IA State University College of Veterinary Medicine, Ames, IA
Graduate major: Veterinary Microbiology
2006 – 2008 IA State University College of Veterinary Medicine, Ames, IA
Graduate major: Veterinary Microbiology
1990 – 1994 IA State University College of Veterinary Medicine, Ames, IA
Professional major: Veterinary Medicine
1986 – 1990 IA State University College of Veterinary Medicine, Ames, IA
Undergraduate major: Animal Science

DEGREES

2012 Doctor of Philosophy, Veterinary Microbiology, IA State University, Ames, IA
2008 Master of Science, Veterinary Microbiology, IA State University, Ames, IA
1994 Doctor of Veterinary Medicine, IA State University College of Vet Med, Ames, IA
1990 Bachelor of Science, Animal Science, IA State University, Ames, IA

EMPLOYMENT

2015-Present Graduate Faculty, Interdepartmental Microbiology, College of Agriculture and Life Sciences, Iowa State University, Ames, IA
2013-Present Graduate Faculty, Veterinary Microbiology and Preventive Medicine, College of Veterinary Medicine, Iowa State University, Ames, IA
2012-Present Assistant Professor, Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State University, Ames, IA
2008-2012: Clinician, Veterinary Diagnostic and Production Animal Medicine, College of Veterinary Medicine, Iowa State University, Ames, IA
2006-2008: Veterinary Medical Officer, USDA-ARS National Animal Disease Center, Ames, IA
Primary investigator in applied research evaluating the pathogenesis of swine viral diseases including Porcine Circovirus type 2b. Assisted with planning and executing experiments with influenza and PRRSV in swine.
1994-2006: Veterinarian and Partner, Marcus/Remsen Veterinary Clinic, PLC, Marcus, IA

Veterinary practitioner and co-owner of two mixed animal clinics providing preventative medicine, diagnostics and surgery for production and companion animals.

LICENSURE / ACCREDITATION / CERTIFICATIONS

2015- Present Good Clinical Practice Training, Iowa State University, Ames, IA
 1994- Present IA Board of Veterinary Medicine, Des Moines, IA
 1994- Present National Veterinary Accreditation, Animal and Plant Health Inspection Service,
 United State Department of Agriculture

HONORS / AWARDS / RECOGNITION

2014: Certificate of Merit, UDSA/NADC/ARS
 Direct/indirect support Virus & Prion Research Unit

- Recognition for research collaboration between Dr. Phil Gauger and NADC regarding the isolation and characterization of a human-like H3N2/H3N1 influenza virus in swine detected initially in diagnostic submissions to the ISU VDL.

2013: Veterinary Pathology, #4 most important veterinary pathologists in 2012
 ACVP and ASVCP Annual Meeting
<http://www.acvp.org/members/pdf/ACVP%202013%20Business%20Meeting.pdf>

- The ACVP and ASVCP select five manuscripts based on number of citations as the most important published in the journal *Veterinary Pathology*.

2010: American College of Veterinary Microbiologists Award

- Graduate student award for best *in vivo* presentation at CRWAD

2009: Alex Hogg Memorial Scholarship

- American Association of Swine Veterinarians award to a member and veterinarian continuing their graduate education.

2008: Golden Key International Honor Society
 2008: The National Scholars Honor Society
 2007: Certificate of Merit, USDA/ARS/NADC
 Superior research contribution to emerging viral diseases; Virus & Prion Res Unit

- Recognition of research associated with the emerging PCV2b virus in gnotobiotic pigs

2007: Gamma Sigma Delta Honor Society of Agriculture
 2007: Phi Kappa Phi Honor Society
 1993: Purina Mills Swine Proficiency Award
 1992: Pfizer Animal Health Veterinary Scholarship
 1987: Alpha Zeta Honorary Society – IA State University

PROFESSIONAL AND ACADEMIC ASSOCIATIONS

2015 – Present American Association of Veterinary Laboratory Diagnosticians
 1998 – Present American Veterinary Medical Association
 1998 – Present Iowa Veterinary Medical Association
 1994 – Present American Association of Swine Veterinarians
 1994 – Present Veterinary Medical Alumni Association

REFEREED PUBLICATIONS

- * Denotes a student mentored, served as major professor or graduate committee member.
- Denotes the level of participation or assistance provided to the study and/or manuscript.

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56. Palinski RM, Chen Z, Henningson JN, Lang Y, Rowland RR, Fang Y, Prickett J, Gauger PC, Hause BM. Widespread detection and characterization of porcine parainfluenza virus 1 in pigs in the USA. *J Gen Virol* 2016;97(2):281-6.
- Sample collection, manuscript review
55. Zhang J, Piñeyro P, Chen Q, Zheng Y, Li G, Rademacher C, Derscheid R, Guo B, Yoon KJ, Madson D, Gauger P, Schwartz K, Harmon K, Linhares D, Main R. Full-Length Genome Sequences of Senecavirus A from Recent Idiopathic Vesicular Disease Outbreaks in U.S. Swine. *Genome Announc* 2015;12;3(6).
- Data acquisition, manuscript review
54. Harmon KM, Gauger PC, Zhang J, Piñeyro PE, Dunn DD, Chriswell AJ. Whole-Genome Sequences of Novel Porcine Circovirus Type 2 Viruses Detected in Swine from Mexico and the United States. *Genome Announc* 2015;17;3(6).
- Concept development and design, data acquisition, manuscript writing
53. Olds JE, Sun Y, Baum DH, Gauger P. Serologic survey and results of urinary PCR testing for leptospirosis in captive black-tailed prairie dogs (*Cynomys ludovicianus*). *J Zoo Wildl Med* 2015 Dec;46(4):843-9.
- Data acquisition, manuscript writing and review
52. *Thomas JT, Chen Q, **Gauger PC**, Giménez-Lirola LG, Sinha A, Harmon KM, Madson DM, Burrough ER, Magstadt DR, Salzbrenner HM, Welch MW, Yoon KJ, Zimmerman JJ, Zhang J. Effect of Porcine Epidemic Diarrhea Virus Infectious Doses on Infection Outcomes in Naïve Conventional Neonatal and Weaned Pigs. *PLoS One* 2015;6;10(10):e0139266.
- Assist concept development and design, histopathology analysis, data acquisition, manuscript review
51. Ouyang K, Shyu DL, Dhakal S, Hiremath J, Binjawadagi B, Lakshmanappa YS, Guo R, Ransburgh R, Bondra KM, **Gauger P**, Zhang J, Specht T, Gilbertie A, Minton W, Fang Y, Renukaradhya GJ. Evaluation of humoral immune status in porcine epidemic diarrhea virus (PEDV) infected sows under field conditions. *Vet Res* 2015;14;46(1):140.
- Concept development and design, sample collection, data acquisition, manuscript review
50. Pillatzki AE, **Gauger PC**, Madson DM, Burrough ER, Zhang J, Chen Q, Magstadt DR, Arruda PE, Stevenson GW, Yoon KJ. Experimental inoculation of neonatal piglets with feed naturally contaminated with porcine epidemic diarrhea virus (PEDV). *J Swine Health Prod* 2015;23(6):317-320.
- Concept development and design, sample collection, sample analysis, data acquisition, data analysis, manuscript writing, co-investigator on grant.
49. Rajão DS, **Gauger PC**, Anderson TK, Lewis NS, Abente EJ, Killian ML, Perez DR, Sutton TC, Zhang J, Vincent AL. Novel reassortant human-like H3N2 and H3N1 influenza A viruses detected in pigs are virulent and antigenically distinct from endemic viruses. *J Virol* 2015 Aug 26. pii: JVI.01675-15. [Epub ahead of print] PubMed PMID: 26311895.
- Histopathology analysis, virus isolation and epidemiology, data acquisition, manuscript review

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48. Hughes HR, Vincent AL, Brockmeier SL, **Gauger PC**, Pena L, Santos J, Braucher DR, Perez DR, Loving CL. Oral fluids as a live-animal sample for evaluating cross-reactivity and cross-protection following intranasal influenza A virus vaccination in pigs. *Clin Vaccine Immunol* 2015 Aug 19. pii: CVI.00358-15. [Epub ahead of print] PubMed PMID: 26291090.
- Histopathology analysis, data acquisition, manuscript review
47. Hause B, Collin EA, Peddireddi L, Yuan F, Chen Z, Hesse RA, **Gauger PC**, Clement T, Fang Y, Anderson G. Discovery of a novel putative atypical porcine pestivirus in pigs in the United States. *J Gen Virol* 2015 Jul 24. doi:10.1099/jgv.0.000251. [Epub ahead of print] PubMed PMID: 26219947.
- Sample collection, data acquisition, manuscript review
46. Burrough ER, Rotolo ML, **Gauger PC**, Madson DM, Schwartz KJ. Correlation of *Lawsonia intracellularis* semi-quantitative fecal polymerase chain reaction assay results with the presence of histologic lesions of proliferative enteropathy and positive immunohistochemical staining. *J Swine Health Prod* 2015; 23(4):204-207.
- Assist data collection and concept design, manuscript preparation, manuscript review
45. *Chen Q, **Gauger P**, Stafne M, Thomas J, Arruda P, Burrough E, Madson D, Brodie J, Magstadt D, Derscheid R, Welch M, Zhang J. Pathogenicity and pathogenesis of a United States porcine deltacoronavirus cell culture isolate in 5-day-old neonatal piglets. *Virology* 2015; 482:51-9.
- Assist concept development and design, sample collection, data acquisition, histopathology analysis, manuscript review
44. Wilberts BL, Schwartz KJ, **Gauger PC**, Wang C, Burrough ER. Evidence of Oxidative Injury in Pigs with Melanosis Coli. *Vet Pathol* 2015; 52(4):663-7.
- Assist concept development and design, sample collection, data acquisition, histopathology analysis, manuscript review
43. Sinha A, **Gauger P**, Zhang J, Yoon KJ, Harmon K. PCR-based retrospective evaluation of diagnostic samples for emergence of porcine deltacoronavirus in US swine. *Vet Microbiol* 2015; Jun 10. pii: S0378-1135(15)00241-2. doi:10.1016/j.vetmic.2015.06.005. [Epub ahead of print] PubMed PMID: 26119039.
- Concept development and design, sample collection and organization, data acquisition, manuscript review
42. Madson DM, Arruda PH, Magstadt DR, Burrough ER, Hoang H, Sun D, Bower LP, Bhandari M, **Gauger PC**, Stevenson GW, Wilberts BL, Wang C, Zhang J, Yoon KJ. Characterization of Porcine Epidemic Diarrhea Virus Isolate US/Iowa/18984/2013 Infection in 1-Day-Old Cesarean-Derived Colostrum-Deprived Piglets. *Vet Pathol* 2015; Jun 25. pii: 0300985815591080. [Epub ahead of print] PubMed PMID: 26113613.
- Sample collection, manuscript review, Co-I on grant
41. Pepin BJ, Kittawornrat A, Liu F, **Gauger PC**, Harmon K, Abate S, Main R, Garton C, Hargrove J, Rademacher C, Ramirez A, Zimmerman J. Comparison of specimens for detection of porcine reproductive and respiratory syndrome virus infection in boar studs. *Transbound Emerg Dis* 2015; 62(3):295-304.
- Diagnostic testing, manuscript review
40. Panyasing Y, Goodell C, Kittawornrat A, Wang C, Levis I, Desfresne L, Rauh R, **Gauger PC**, Zhang J, Lin X, Azeem S, Ghorbani-Nezami S, Yoon KJ, Zimmerman J. Influenza A Virus

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- Surveillance Based on Pre-Weaning Piglet Oral Fluid Samples. *Transbound Emerg Dis* 2014 Dec 9. doi: 10.1111/tbed.12307.
- Diagnostic testing, manuscript review
39. **Gauger PC**, Loving CL, Khurana S, Lorusso A, Perez DR, Kehrli ME Jr, Roth JA, Golding H, Vincent AL. Live attenuated influenza A virus vaccine protects against A(H1N1)pdm09 heterologous challenge without vaccine associated enhanced respiratory disease. *Virology* 2014; 28:471-473.
- Concept development and design, sample collection, sample analysis, data acquisition, data analysis, manuscript writing, histopathology analysis
38. Madson DM, Magstadt DR, Arruda PH, Hoang H, Sun D, Bower LP, Bhandari M, Burrough ER, **Gauger PC**, Pillatzki AE, Stevenson GW, Wilberts BL, Brodie J, Harmon KM, Wang C, Main RG, Zhang J, Yoon KJ. Pathogenesis of porcine epidemic diarrhea virus isolate (US/IA/18984/2013) in 3-week-old weaned pigs. *Vet Microbiol* 2014; 7; 174(1-2):60-68.
- Sample collection, manuscript review, Co-I on grant
37. Rajão DS, Loving CL, **Gauger PC**, Kitikoon P, Vincent AL. Influenza A virus hemagglutinin protein subunit vaccine elicits vaccine-associated enhanced respiratory disease in pigs. *Vaccine* 2014; 8; 32(40):5170-51766.
- Histopathology analysis, assist concept development and design, data acquisition, manuscript review
36. Zhang J, Chen Q, **Gauger PC**, Harmon KM, Yoon KJ. Reply to "classification of emergent U.S. strains of porcine epidemic diarrhea virus by phylogenetic analysis of nucleocapsid and ORF3 genes". *J Clin Microbiol* 2014; 52(9):3511-3514.
- Manuscript review
35. Lowe J, **Gauger P**, Harmon K, Zhang J, Connor J, Yeske P, Loula T, Levis I, Desfresne L, Main R. Role of transportation in spread of porcine epidemic diarrhea virus infection, United States. *Emerg Infect Dis* 2014; 20(5):872-4.
- Data acquisition, manuscript review
34. Flower JE, Gamble KC, Stone M, Lyons JA, Maganti RJ, Tuomi PA, Olds JE, Sims MA, **Gauger P**, Tuttle AD. Esophageal squamous cell carcinoma in six harbor seals (*Phoca vitulina* spp.). *J Zoo Wildl Med* 2014; 45(3):620-31.
- Histopathology analysis (ISU VDL Submission)
33. Loving CL, Brockmeier SL, Vincent AL, **Gauger PC**, Zanella EL, Lager KM, Kehrli ME. Cross-fostering to prevent maternal cell transfer did not prevent vaccine-associated enhanced respiratory disease that occurred following heterologous influenza challenge of pigs vaccinated in the presence of maternal immunity. *Viral Immunol* 2014; 27(7):334-342.
- Experiment assistance, histopathology analysis, data acquisition, manuscript review
32. Li G, Chen Q, Harmon KM, Yoon KJ, Schwartz KJ, Hoogland MJ, **Gauger PC**, Main RG, Zhang J. Full-Length Genome Sequence of Porcine Deltacoronavirus Strain USA/IA/2014/8734. *Genome Announc* 2014; 10; 2(2). pii: e00278-14. doi:10.1128/genomeA.00278-14.
- Data acquisition, manuscript review

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31. *Chen Q, Li G, Stasko J, Thomas JT, Stensland WR, Pillatzki AE, **Gauger PC**, Schwartz KJ, Madson D, Yoon KJ, Stevenson GW, Burrough ER, Harmon KM, Main RG, Zhang J. Isolation and characterization of porcine epidemic diarrhea viruses associated with the 2013 disease outbreak among swine in the United States. *J Clin Microbiol* 2014; 52(1):234-243.
 - Assist concept development, data acquisition, manuscript review
 30. Madson DM, Ensley SM, Patience JF, **Gauger PC**, Main RG. Diagnostic assessment and lesion evaluation of chronic deoxynivalenol (DON) intoxication in growing swine. *J Swine Health and Prod.* 2014; 22(2):78-83.
 - Data acquisition, manuscript review
 29. Kittawornrat A, Panyasing Y, Goodell C, Wang C, **Gauger P**, Harmon K, Rauh R, Desfresne L, Levis I, Zimmerman J. Porcine reproductive and respiratory syndrome virus (PRRSV) surveillance using pre-weaning oral fluid samples detects circulation of wild-type PRRSV. *Vet Microbiol* 2014; 31; 168(2-4):331-339.
 - Diagnostic testing, manuscript review
 28. Olds JE, Burrough ER, Madson DM, Ensley SM, Horst R, Janke BH, Schwartz KJ, Stevenson GW, **Gauger PG**, Cooper VL, Arruda P, Opriessnig T. Clinical investigation into feed-related hypervitaminosis D in a captive flock of budgerigars (*Melopsittacus undulatus*): morbidity, mortalities, and pathologic lesions. *J Zoo Wildlife Med* 2015; 46(1):9-17.
 - Histopathology analysis (ISU VDL Submission), manuscript review
 27. Kitikoon P, **Gauger PC**, Anderson TK, Culhane MR, Swenson S, Loving CL, Perez DR, Vincent AL. Swine influenza virus vaccine serologic cross-reactivity to contemporary US swine H3N2 and efficacy in pigs infected with an H3N2 similar to 2011-2012 H3N2v. *Influenza Other Respir Viruses* 2013;7 Suppl 4:32-41.
 - Histopathology analysis, data acquisition, manuscript review
 26. **Gauger PC**, Loving CL, Lager KM, Janke BH, Kehrl ME Jr, Roth JA, Vincent AL. Vaccine-associated enhanced respiratory disease does not interfere with the adaptive immune response following challenge with pandemic A/H1N1 2009. *Viral Immunol* 2013; 26(5):314-321.
 - Concept development and design, sample collection, sample analysis, data acquisition, data analysis, manuscript writing, histopathology analysis
 25. Loving CL, Lager KM, Vincent AL, Brockmeier SL, **Gauger PC**, Anderson TK, Kitikoon P, Perez DR, Kehrl ME Jr. Efficacy in pigs of inactivated and live attenuated influenza virus vaccines against infection and transmission of an emerging H3N2 similar to the 2011-2012 H3N2v. *J Virol* 2013;87(17):9895-9903.
 - Histopathology analysis, data acquisition, manuscript review
 24. Stevenson GW, Hoang H, Schwartz KJ, Burrough ER, Sun D, Madson D, Cooper VL, Pillatzki A, **Gauger P**, Schmitt BJ, Koster LG, Killian ML, Yoon KJ. Emergence of Porcine epidemic diarrhea virus in the United States: clinical signs, lesions, and viral genomic sequences. *J Vet Diagn Invest* 2013; 25(5):649-654.
 - Histopathology analysis (ISU VDL Submission), data acquisition
 23. Khurana S, Loving CL, Manischewitz J, King LR, **Gauger PC**, Henningson J, Vincent AL, Golding H. Vaccine-induced anti-HA2 antibodies promote virus fusion and enhance influenza virus respiratory disease. *Sci Transl Med* 2013; Aug 28; 5(200):200ra114.

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- Assist concept development, data acquisition, sample collection, sample analysis, histopathology analysis
22. Pepin BJ, Kittawornrat A, Liu F, **Gauger PC**, Harmon K, Abate S, Main R, Garton C, Hargrove J, Rademacher C, Ramirez A, Zimmerman J. Comparison of Specimens for Detection of Porcine Reproductive and Respiratory Syndrome Virus Infection in Boar Studs. *Transbound Emerg Dis* 2013; July 30. doi: 10.1111/tbed.12135.
 - Diagnostic testing
 21. Madson DM, Ensley SM, **Gauger PC**, Schwartz KJ, Stevenson GW, Cooper VL, Janke BJ, Burrough ER, Goff JP, Horst RL. Metabolic bone disease: A case series and diagnostic review of hypovitaminosis D in swine. *J Vet Diagn Invest* 2012; 46:1137- 1144.
 - Histopathology (ISU VDL Submission), data acquisition
 20. **Gauger PC**, Vincent AL, Loving CL, Henningson JN, Lager KM, Janke BH, Kehrli ME, Roth JA. Kinetics of lung lesion development and pro-inflammatory cytokine response in pigs with vaccine-associated enhanced respiratory disease induced by challenge with pandemic (2009) A/H1N1 influenza virus. *Vet Pathol* 2012; Nov; 49(6):900-912.
 - Concept development and design, sample collection, sample analysis, data acquisition, data analysis, manuscript writing, histopathology analysis
 19. Vincent AL, Ma W, Lager KM, Richt JA, Janke BH, Sandbulte MR, **Gauger PC**, Loving CL, Webby RJ, García-Sastre A. Live attenuated influenza vaccine provides superior protection from heterologous infection in pigs with maternal antibodies without inducing vaccine-associated enhanced respiratory disease. *J Virol* 2012; 86(19):10597-10605.
 - Histopathology analysis, data acquisition, manuscript review
 18. Opriessnig T, **Gauger PC**, Faaberg KS, Shen H, Beach NM, Meng XJ, Wang C, Halbur PG. Effect of porcine circovirus type 2a or 2b on infection kinetics and pathogenicity of two genetically divergent strains of porcine reproductive and respiratory syndrome virus in the conventional pig model. *Vet Microbiol* 2012; Jul 6; 158(1-2):69-81.
 - Sample collection, sample analysis, data acquisition, manuscript writing, histopathology analysis
 17. Kitikoon P, Vincent AL, **Gauger PC**, Schlink SN, Bayles DO, Gramer MR, Darnell D, Webby RJ, Lager KM, Swenson SL, Klimov A. Pathogenicity and transmission in pigs of the novel A(H3N2)v influenza virus isolated from humans and characterization of swine H3N2 viruses isolated in 2010-2011. *J Virol* 2012; 86(12):6804-6814.
 - Histopathology analysis, data acquisition, manuscript review
 16. Ciacci Zanella JR, Vincent AL, Zanella EL, Lorusso A, Loving CL, Brockmeier SL, **Gauger PC**, Janke BH, Gramer MR. Comparison of Human-Like H1 (δ -Cluster) Influenza A Viruses in the Swine Host. *Influenza Res Treat* 2012; 2012:329029.
 - Histopathology analysis, data acquisition, manuscript review
 15. Neto JCG, **Gauger PC**, Strait ER, Boyes N, Madson DM, Schwartz KJ. Mycoplasma-associated arthritis: Critical points for diagnosis. *J Swine Health Prod* 2012; 20(2):82–86.
 - Concept development and design, sample collection, data acquisition, data analysis, manuscript writing

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14. **Gauger PC**, Faaberg KS, Guo B, Kappes MA, Opriessnig T. Genetic and phenotypic characterization of a 2006 United States porcine reproductive and respiratory virus isolate associated with high morbidity and mortality in the field. *Virus Res* 2012; 163(1):98-107.
 - Manuscript writing, concept development and design, sample analysis, data acquisition, data analysis
 13. **Gauger PC**, Lager KM, Vincent AL, Opriessnig T, Cheung AK, Butler JE, Kehrli ME Jr. Leukogram abnormalities in gnotobiotic pigs infected with porcine circovirus type 2. *Vet Microbio.* 2011; 154(1-2):185-190.
 12. **Gauger PC**, Lager KM, Vincent AL, Opriessnig T, Kehrli ME Jr, Cheung AK. Postweaning multisystemic wasting syndrome produced in gnotobiotic pigs following exposure to various amounts of porcine circovirus type 2a or type 2b. *Vet Microbiol* 2011; 153(3-4):229-239.
 11. Platt R, Vincent AL, **Gauger PC**, Loving CL, Zanella EL, Lager KM, Kehrli ME Jr, Kimura K, Roth JA. Comparison of humoral and cellular immune responses to inactivated swine influenza virus vaccine in weaned pigs. *Vet Immunol Immunopathol* 2011; 142(3-4):252-257.
 10. **Gauger PC**, Vincent AL, Loving CL, Lager KM, Janke BH, Kehrli ME Jr, Roth JA. Enhanced pneumonia and disease in pigs vaccinated with an inactivated human-like (δ -cluster) H1N2 vaccine and challenged with pandemic 2009 H1N1 influenza virus. *Vaccine* 2011; 29(15):2712-2719.
 9. Pena L, Vincent AL, Ye J, Ciacci-Zanella JR, Angel M, Lorusso A, **Gauger PC**, Janke BH, Loving CL, Perez DR. Modifications in the polymerase genes of a swine-like triple-reassortant influenza virus to generate live attenuated vaccines against 2009 pandemic H1N1 viruses. *J Virol* 2011; 85(1):456-69.
 8. **Gauger PC**, Patterson AR, Kim WI, Stecker KA, Madson DM, Loynachan AT. An outbreak of porcine malignant catarrhal fever in a farrow-to-finish swine farm in the United States. *J Swine Health Prod* 2010; 18(5):244-248.
 7. Vincent AL, Ciacci-Zanella JR, Lorusso A, **Gauger PC**, Zanella EL, Kehrli ME Jr, Janke BH, Lager KM. Efficacy of inactivated swine influenza virus vaccines against the 2009 A/H1N1 influenza virus in pigs. *Vaccine* 2010; 28(15):2782-7.
 6. Patterson AR, Cooper VL, Yoon KJ, Janke BH, **Gauger PC**. Naturally occurring influenza infection in a ferret (*Mustela putorius furo*) colony. *J Vet Diagn Invest* 2009; 21(4):527-30.
 5. Brockmeier SL, Lager KM, Grubman MJ, Brough DE, ETTYREDDY D, SACCO RE, **Gauger PC**, Loving CL, Vorwald AC, Kehrli ME Jr, Lehmkuhl HD. Adenovirus-mediated expression of interferon-alpha delays viral replication and reduces disease signs in swine challenged with porcine reproductive and respiratory syndrome virus. *Viral Immunol* 2009; 22(3):173-80.
 4. Vincent AL, Swenson SL, Lager KM, **Gauger PC**, Loiacono C, Zhang Y. Characterization of an influenza A virus isolated from pigs during an outbreak of respiratory disease in swine and people during a county fair in the United States. *Vet Microbiol* 2009; 137(1-2):51-9.
 3. Ma W, Vincent AL, Gramer MR, Brockwell CB, Lager KM, Janke BH, **Gauger PC**, Patnayak DP, Webby RJ, Richt JA. Identification of H2N3 influenza A viruses from swine in the United States. *Proc Natl Acad Sci U S A* 2007; 104(52):20949-54.

2. Lager KM, **Gauger PC**, Vincent AL, Opriessnig T, Kehrli ME Jr, Cheung AK. Mortality in pigs given porcine circovirus type 2 subgroup 1 and 2 viruses derived from DNA clones. *Vet Rec* 2007; 161(12):428-9.
1. Ma W, Vincent AL, Gramer MR, Brockwell CB, Lager KM, Janke BH, **Gauger PC**, Patnayak DP, Webby RJ, Richt JA. Identification of H2N3 influenza A viruses from swine in the United States. *Proc Natl Acad Sci* 2007; 104(52):20949-54.

REFEREED PUBLICATIONS ACCEPTED FOR PUBLICATION

- * Denotes a student mentored, served as major professor or graduate committee member.
 - Denotes the level of participation or assistance provided to the study and/or manuscript.
4. Arruda PHE, Stevenson GW, Killian ML, Burrough ER, **Gauger PC**, Harmon KM, Magstadt DR, Yoon KJ, Zhang J, Madson DM, Pineyro P, Derscheid RJ, Schwartz KJ, Cooper VL, Halbur PG, Main RG, Sato Y, Arruda BL. Natural outbreak of H5N2 highly pathogenic avian influenza virus in 2015 in two commercial layer facilities in Iowa: Lesions and viral antigen distribution. *J Vet Diag Investigation* 2015: Accepted.
 - Manuscript review
 3. Chen Q, Thomas JT, Gimenez-Lirola LG, Hardham JM, Gao Q, Gerber PF, Opriessnig T, Zheng Y, Li G, **Gauger PC**, Madson DM, Magstadt DR, Zhang J. Evaluation of serological cross-reactivity and cross-neutralization between the United State porcine epidemic diarrhea virus prototype and S-INDEL-variant strains. *J Clin Micro* 2015: Accepted.
 - Data acquisition, manuscript review
 2. Dewell GA, Phillips PE, Dohlman TA, Harmon KL, Gauger PC. Validation of a new sampling methodology to detect *Tritrichomonas foetus* by real-time polymerase chain reaction. *J Vet Diag Invest* 2015: Accepted.
 - Sample collection, data acquisition
 1. Balzli C, Lager KM, Vincent AL, **Gauger PC**, Brockmeier SL, Miller LC, Richt JA, Ma W, Suarez D, Swayne DE. Susceptibility of swine to H5 and H7 low pathogenic avian influenza viruses. *Influenza Other Respir Viruses* 2015: Accepted.
 - Data acquisition, histopathology analysis, manuscript review

REFEREED PUBLICATIONS SUBMITTED FOR PUBLICATION

- * Denotes a student mentored, served as major professor or graduate committee member.
 - Denotes the level of participation or assistance provided to the study and/or manuscript.
7. Souza C, Rajao D, Loving CL, Gauger PC, Perez D, Vincent AL. Age at vaccination and timing of infection do not alter vaccine-associated enhanced respiratory disease in influenza A virus infected pigs. *Clin Vaccine Immunol* 2015: Submitted.
 - Data acquisition, histopathology analysis, manuscript review
 6. *Chen Q, Gauger PC, Stafne MR, Thomas JT, Madson DM, Huang H, Zheng Y, Li G, Zhang J. Pathogenesis Comparison between the United States Porcine Epidemic Diarrhea Virus Prototype and S-INDEL-variant Strains in Conventional Neonatal Piglets. *J Gen Virol* 2015: Submitted.
 - Concept development and design, data acquisition, histopathology analysis, manuscript review

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5. *Chen Q, Thomas JT, Gimenez-Lirola LG, Hardham JM, Gao Q, Gerber PF, Opriessnig T, Zheng Y, Li G, **Gauger PC**, Madson DM, Magstadt DR, Zhang J. Evaluation of serological cross-reactivity and cross-neutralization between the United State porcine epidemic diarrhea virus prototype and S-INDEL-variant strains. *J Clin Micro* 2015: Submitted.
 - Data acquisition, manuscript review
 4. Zhang J, Zheng Y, Xia XQ, Chen Q, Bade SA, Yoon KJ, Harmon KM, **Gauger PC**, Main RG, Li G. Whole genome sequencing of porcine reproductive and respiratory syndrome virus from cell culture isolates and clinical samples using next-generation sequencing technology. *BioTechniques* 2015: Submitted.
 - Data acquisition, manuscript review
 3. Schirtzinger EE, Peddireddi L, **Gauger PC**, Clement T, Hause BM. Genetic diversity of porcine reproductive and respiratory syndrome virus membrane and glycoprotein genes determined by metagenomic sequencing of clinical samples. *Vet Micro* 2015: Submitted.
 - Collect and manage samples, data acquisition, manuscript review
 2. Hughes H, Vincent AL, Brockmeier SL, **Gauger PC**, Pena L, Santos J, Braucher DR, Perez DR, Loving CL. Mucosal IgA levels and cross-protection following intranasal vaccination for influenza A virus in pigs. *Clin Vaccine Immunol* 2015: Submitted.
 - Histopathology analysis, data acquisition, manuscript review
 1. Brockmeier SL, Sandbulte MR, **Gauger PC**, Kitikoon P, Chen H, Perez D, Roth J, Vincent AL. Differential mucosal and systemic neuraminidase inhibiting antibody responses induced by experimental influenza A virus vaccines in pigs. *J Clin Microbiol* 2015: Submitted.
 - Sample collection, data acquisition

PUBLICATIONS IN PREPARATION FOR SUBMISSION

- * Denotes a student mentored, served as major professor or graduate committee member.
 - Denotes the level of participation or assistance provided to the study and/or manuscript.
 - ‡ Denotes corresponding author.
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 48. *Dias AS, **Gauger PC**, Vincent AL, Baker RB, Zhang J, Kitikoon P. Detection of influenza A virus maternally derived antibodies in neonatal pigs from dams administered inactivated influenza vaccines in commercial swine farms. The 94th Annual Meeting of the Conference of Research Workers in Animal Diseases. December 8-10, 2013. Chicago, Illinois, USA. Abstract # 130.
 47. Arruda P, Madson DM, Magstadt D, Hoang H, Sun D, Wilberts B, Bower L, Burrough E, **Gauger PC**, Pillatzki A, Yoon KJ. Pathogenesis of porcine epidemic diarrhea virus (PEDv) isolate (US/IA/18984/2013) in CDCD neonatal piglets. The 94th Annual Meeting of the Conference of Research Workers in Animal Diseases. December 8-10, 2013. Chicago, Illinois, USA. Abstract # 140.
 46. #**Gauger PC**, Zhang J, Berkland MK, Arruda PA, Madson DM. FosterTM PRRSV exposure in gestating swine and congenital infection. 2013 Allen D. Lemans Swine Conference. September 15-17, 2013. St. Paul, MN. p. 184
 41. Zhang J, **Gauger PC**, Berkland MK, Chen Q, Haney D, Thomas J. Evaluation of FosterTM PRRS vaccine shedding in growing pigs following vaccination. 2013 Allen D. Lemans Swine Conference. September 15-17, 2013. St. Paul, MN. p. 182.
 40. *Thomas J, Chen Q, Mondal S, Balasuriya U, **Gauger PC**, Zhang J. Application of Equine and Porcine Chimeric Arteriviruses to Determine the Porcine Reproductive and Respiratory Syndrome Virus (PRRSV) Proteins Responsible for the Host Range and Induction of Protective Immunity. IA State University College of Veterinary Medicine Summer Scholar Research Day. August 9, 2013. Ames, IA.
 39. Zhang J, Haney D, Lin K, **Gauger PC**. Swine Influenza Virus Diagnostic Experience: Correlations of Screening PCR, Subtyping PCR, Sequencing, and Virus Isolation Based on Specimen Types. The Fogarty International Center (FIC) of the U.S. National Institutes of Health (NIH), the Influenza Research Database (IRD), USDA National Centers of Animal Health (NCAH), and National Pork Board (NPB) Influenza Research Workshop. National Animal Disease Center, Ames, IA. May 7-10, 2013.
 38. *Dias A, Vincent AL, Zhang J, Baker RB, **Gauger PC**. Detection and characterization of influenza A virus endemic circulation in neonatal and nursery pigs in a farm using routine influenza vaccination. The Fogarty International Center (FIC) of the U.S. National Institutes of Health (NIH), the Influenza Research Database (IRD), USDA National Centers of Animal Health (NCAH), and

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- National Pork Board (NPB) Influenza Research Workshop. National Animal Disease Center, Ames, IA. May 7-10, 2013.
37. Pepin B, Kittawornrat A, **Gauger PC**, Main R, Garton C, Hargrove J, Rademacher C, Zimmerman J. Comparison of specimens for monitoring PRRSV in boar studs: what works best? American Association of Swine Veterinarians Annual Meeting. San Diego, CA. March 2-5, 2013. p. 99.
 36. *Berkland MK, **Gauger PC**, Zhang J, Madson DM, Arruda P. Safety of modified live PRRSV 19S1.21 exposure in late gestation swine. American Association of Swine Veterinarians Annual Meeting. San Diego, CA. March 2-5, 2013.
 35. #**Gauger PC**, Burrough ER. "You make the call:" A rapid-fire case-based review. American Association of Swine Veterinarians Annual Meeting. San Diego, CA. March 2-5, 2013.
 34. Kehrli ME, Vincent AL, **Gauger PC**, Kitikoon P, Anderson TK, Loving CL, Lager KM. Overview of swine influenza virus vaccine research and technology: What's on the horizon and what do we need to move forward? American Association of Swine Veterinarians Annual Meeting. San Diego, CA. March 2-5, 2013.
 33. #**Gauger PC**. Diagnostic considerations in post-weaning enteric disease detection and diagnosis. Swine Disease Conference for Swine Practitioners. Ames, IA. November 8-9, 2012. 20:31-42.
 32. Cheung AK, Kehrli ME, Lager KM, **Gauger PC**, Rohrer GA, Michael DD, Miller LC, Vincent AL, Braucher DR. Development of antinuclear antibodies and a genetic linkage in pigs infected with porcine circovirus type 2. IXth International Congress of Veterinary Virology. Madrid, Spain. September 4-7, 2012. p. 189-190.
 31. Henningson JN, Braucher DR, Loving CL, Kitikoon P, **Gauger PC**, Kehrli ME, Vincent AL. Adenovirus vectored vaccines against influenza A virus do not result in vaccine associated enhanced respiratory disease following heterologous challenge in contrast to whole inactivated virus vaccine. American College of Veterinary Pathologists Annual Meeting. Seattle, WA. December 1-5, 2012.
 30. Kitikoon P, Vincent AL, **Gauger PC**, Schlink SN, Bayles DO, Gramer M, Darnell D, Webby R, Lager KM, Swenson S, Klimov A. Comparison of 2010-2011 H3N2 influenza A viruses isolated from swine and the A(H3N2)v isolated from humans in 2011. American Society for Virology 31st Annual Meeting. Madison, WI. July 21-25, 2012. p. 102.
 29. Zhang J, **Gauger PC**, Chriswell A, Lin K, Nezami S, Sun D, Haney D, Stensland W, Irons A, Harmon K, Strait E, Yoon KJ. Epidemiology of influenza A virus (IAV) circulating in US swine between 2004 and 2011. American Association of Veterinary Laboratory Diagnosticians. Greensboro, NC. October 17-24, 2012. p. 132.
 28. Loving CL, Vincent AL, Brockmeier S, **Gauger PC**, Perez D, Khurana S, Golding H. Influenza A virus in pigs: protection, provocation and predisposition. Gordon Research Conference. Biology of Acute Respiratory Infection. Ventura, California, March 11-16, 2012.
 27. Vincent AL, Kitikoon P, **Gauger PC**, Gramer MR, Lorusso A, Lager KM, Ciacci-Zanella JR. Global coordination for swine influenza virus surveillance and research: what are we missing from the big picture? American Association of Swine Veterinarians Annual Meeting. Denver, Colorado. March 10-13, 2012.

26. **Gauger PC**, Vincent AL, Loving CL, Lorusso A, Lager KM, Pena L, Perez D. Modified live virus vaccine induces a distinct immune response profile compared to inactivated influenza A virus vaccines in swine. Conference of Research Workers in Animal Diseases. Chicago, Illinois. December 4-6, 2011. #148.
25. **Gauger PC**, Vincent AL, Loving CL, Lager KM, Henningson JN, Janke BH, Khurana S, Golding H. Enhanced pneumonia with pandemic 2009 A/H1N1 swine influenza virus in pigs vaccinated with an inactivated delta-cluster H1N2 vaccine. MISMS Interdisciplinary Workshop on Influenza Virus Evolution, Immunity, and Epidemiology. Bethesda, Maryland. June 7-8, 2011.
24. **Gauger PC**, Vincent AL. Swine influenza virus: epidemiology and vaccine concerns. Swine Disease Conference for Swine Practitioners. Ames, IA. November 10-11, 2011. 19:13-21.
23. Lager KM, Vincent AL, **Gauger PC**, Senne DA, Swayne DE, Miller LC, Ma W, Suarez DL, Kehrli ME. The mixing vessel pendulum. International Conference on Emerging Zoonoses. Cancun, Mexico. February 24-27, 2011.
22. **Gauger PC**, Vincent AL, Loving CL, Lager KM, Janke BH, Kehrli ME, Roth JA. Enhanced pneumonia with pandemic 2009 A/H1N1 swine influenza virus in pigs vaccinated with an inactivated δ -cluster H1N2 vaccine. Conference of Research Workers in Animal Disease. Chicago, Illinois. December 5-7, 2010. #161.
21. Vincent AL, Lorusso A, Lager KM, **Gauger PC**, Gramer MR, Ciacci-Zanella JR. Swine influenza virus: emerging understandings. Proceedings of 18th Annual Swine Disease Conference for Swine Practitioners. Ames, IA. November 4-5, 2010. p. 57-62.
20. Vincent AL, Ciacci-Zanella JR, Lorusso A, **Gauger PC**, Zanella EL, Kehrli ME, Janke BH, Lager KM. Efficacy of inactivated swine influenza virus vaccines against 2009 H1N1 influenza virus in pigs. 21st International Pig Veterinary Society. Vancouver, Canada. July 18-21, 2010. Volume 1, p. 299.
19. **Gauger PC**, Vincent AL, Loving CL, Lager KM. Enhanced pneumonia with pandemic 2009 A/H1N1 swine influenza virus in pigs vaccinated with an inactivated δ -cluster H1N2 vaccine. 21st International Pig Veterinary Society. Vancouver, Canada. July 18-21, 2010. Volume 1, p. 255.
18. Lager KM, Vincent AL, **Gauger PC**, Senne DA, Swayne DE, Miller LC, Richt JA, Ma W, Suarez DL, Kehrli ME. Susceptibility of swine to low pathogenic H5 and H7 avian influenza viruses. 21st International Pig Veterinary Society. Vancouver, Canada. July 18-21, 2010. Volume 1, p. 79.
17. Vincent AL, Ciacci-Zanella JR, Lorusso A, Zanella EL, Lager KM, **Gauger PC**, Janke BH, Kehrli ME. Experimental challenge with two isolates of 2009 A/H1N1 in weaned pigs. 21st International Pig Veterinary Society. Vancouver, Canada. July 18-21, 2010. Volume 1, p. 74.
16. **Gauger PC**. Porcine Respiratory Disease Complex trends and diagnostics for practitioners. 17:83-92. Swine Disease Conference for Veterinarians. Ames, Iowa. November 5-6, 2009.

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15. **Gauger PC**, Opriessnig T, Pal N, Halbur PG, Lager KM, Meng XJ. Swine hepatitis E virus (HEV) infection in gnotobiotic pigs. Conference of Research Workers in Animal Disease. Chicago, Illinois. December 7-9, 2008. #165.
 14. **Gauger PC**, Lager KM, Vincent AL, Opriessnig T, Kehrli ME, Cheung AK. Experimental infections with PCV2a and PCV2b subtypes. 16:69-76. Swine Disease Conference for Veterinarians. Ames, IA. November 6-7, 2008.
 13. **Gauger PC**, Lager KM, Vincent AL, Opriessnig T, Kehrli ME, Cheung AK. Pathogenesis of PCV2a and PCV2b in germ-free pigs. 20th International Pig Veterinary Society Congress. Durban, South Africa. June 22-26, 2008.
 12. Vincent AL, Ma W, Gramer M, Rockwell CB, Lager KM, Janke B, **Gauger PC**, Patnayak DP, Webby RJ, Richt J. Experimental evaluation of novel swine influenza virus subtypes. 39th Annual Meeting of the American Association of Swine Veterinarians. San Diego, CA. March 8-11, 2008.
 11. Ma W, Vincent AL, Gramer M, Brockwell C, Janke B, Lager KM, **Gauger PC**, Webby R, Richt J. Identification of H2N3 Influenza A viruses from swine in the United States. U.S.-Japan Cooperative Program in Natural Resources (UNJR). Tsukuba, Ibaraki, Japan. December 5, 2007.
 10. Ma W, Vincent AL, Gramer M, Brockwell C, Janke BH, Lager KM, **Gauger PC**, Webby R, Richt J. Isolation of H2N3 influenza virus subtype from U.S. swine. 5th International Conference on Emerging Zoonoses. Limassol, Cyprus. November 15-18, 2007.
 9. Ma W, Vincent AL, Gramer M, Brockwell C, Janke BH, Lager KM, **Gauger PC**, Webby R, Richt J. Characterization of the novel H2N3 influenza virus subtype isolated from U.S. pigs. American Association of Veterinary Laboratory Diagnosticians 50th Annual Joint Meeting of the USAHA/AAVLD. Reno, NV, October 18-25, 2007.
 8. Vincent AL, **Gauger PC**, Ma W, Lager KM, Janke BH, Webby RJ, Garcia-Sastre A, Richt J. Heterologous protection in pigs vaccinated in the presence of maternally acquired antibody using a truncated NS1 modified live influenza virus vaccine compared to an inactivated vaccine. Conference Research Workers in Animal Diseases Annual Meeting. Chicago, IL. December 2-4, 2007.
 7. **Gauger PC**, Lager KM, Cheung AK. Characterization of the leukogram in PCV2 infected germ-free pigs. 46th North Central Veterinary laboratory Diagnosticians Conference, Ames, IA, June 7-8, 2007.
 6. Lager KM, **Gauger PC**, Vincent AL, Cheung AK. PCVAD diagnosis and emerging diseases: building a systematic approach. American Association of Swine Veterinarians Annual Meeting. Orlando, FL. March 3-6, 2007.
 5. Cheung AK, Lager KM, **Gauger PC**, Vincent AL, Opriessnig T, Kehrli ME. Reproduction of PMWS of high mortality with a porcine circovirus type 2-group 1 isolate. World association of Veterinary laboratory Diagnosticians. 13th International Symposium. Melbourne, Australia. November 11-14, 2007.
 4. Cheung AK, Lager KM, **Gauger PC**, Vincent AL, Opriessnig T. Comparison of the pathogenicity of porcine circovirus type 2 group 1 and group 2 isolates. 5th International Symposium on Emerging and Re-Emerging Pig Diseases. Krakow, Poland. June 24-27, 2007.

3. Brockmeier S, Lager KM, Grubman MJ, Brough D, ETTYREDDY D, SACCO RE, **Gauger PC**, Lehmkühl HD. Presence of interferon-alpha delays viral replication and reduces disease signs in pigs challenged with porcine reproductive and respiratory syndrome virus. Conference Research Workers Disease Meeting. Chicago, IL. December 3-5, 2006.
2. Brockmeier S, Lager KM, Grubman MJ, Brough D, ETTYREDDY D, SACCO RE, **Gauger PC**, Lehmkühl HD. Presence of interferon-alpha delays viral replication and reduces disease signs in pigs challenged with porcine reproductive and respiratory syndrome virus. Porcine Reproductive and Respiratory Syndrome International Symposium. Chicago, IL. December 1-2, 2006.
1. Lager KM, Vincent AL, Cheung AK, **Gauger PC**. Diagnostics of severe PCVAD. 14th Annual Swine Disease Conference for Practitioners. Ames, IA. November 9-10, 2006.

CONFERENCE PROCEEDINGS /ABSTRACTS SUBMITTED

- * Denotes a student mentored, served as major professor or graduate committee member.
- # Denotes the presenter of the presentation.

N/A

POSTER PRESENTATIONS

- * Denotes a student mentored, served as major professor or graduate committee member.
- # Denotes the presenter of the presentation.

16. *Chen Q, Thomas JT, Hunter F, **Gauger PC**, Harmon KM, Main R, Zhang J. Evaluation of Commercial Rapid PED, TGE, and Rota Ag Test Kits for Detecting Virus Pathogens in Porcine Feces. Proceedings of the 58th Annual Meeting of American Association of Veterinary Laboratory Diagnosticians. October 22-28, 2015. Providence, RI. (accepted)
15. Dewell G, Phillips P, **Gauger PC**, Dohlman TM. Comparison of an alternative diagnostic sampling technique for Tritrichomonas foetus in cattle. 2015 American Association of Bovine Practitioners Annual Conference. New Orleans, LA. September 17-19, 2015.
14. Fleck R, Amodie D, O'Brien B, **Gauger PC**, Magstadt DM. Impact of Foster[®] PRRS vaccination on lineage 1 PRRSV challenge. 2015 Allen D. Leman Swine Conference. St. Paul, MN. September 19-22, 2015.
13. *Rotolo M, Gimenez-Lirola L, Abate S, Hoogland M, Wang C, Baum D, **Gauger PC**, Harmon KM, Main R, Ramirez A, Zimmerman JJ. Use of oral fluids in PEDV surveillance. The 7th International Symposium on Emerging and Re-emerging Pig Diseases. Kyoto, Japan. June 21-24, 2015,
12. *Magstadt D, **Gauger PC**, Madson DM, Burrough E, Arruda P, Harmon KM, Pillatzki A, Chen Q, Thomas J, Zhang J. Cross-protection after challenge with a contemporary, heterologous PRRS virus in pigs vaccinated with Foster[™] PRRSV. The 46th American Association of Swine Veterinarians Annual Meeting. Orlando, FL. February 28-March 3, 2015.
11. Tuggle C, Rajao D, Loving CL, **Gauger PC**, Waide EH, Dekkers CM, Vincent AL. Inability of severe combined immune deficient (SCID) pigs to control IAV replication despite innate immune activation. International symposium on vaccines against antigenically variable viruses (VAADV). Iowa State University, Ames, IA. June 18-20, 2014.

10. Panyasing Y, Goodell C, Kittawornrat A, Wang C, Levis I, Desfresne L, Rauh R, **Gauger PC**, Zhang J, Lin K, Nezami S, Azeem S, Yoon KJ, Zimmerman J. Influenza A virus (IAV) surveillance using pre-weaning oral fluid samples. Proceedings of the 45th American Association of Swine Veterinarians Annual Meeting. Poster 66. Dallas, TX. March 1-4, 2014.
9. Allison G, **Gauger PC**, Strobel M. Administration of oral pro: vitamin D3 plus E in drinking water of gestating sows. Proceedings of the 45th American Association of Swine Veterinarians Annual Meeting. Poster 84. Dallas, TX. March 1-4, 2014.
8. Arruda P, Madson DM, Magstadt D, Hoang H, Sun D, Wilberts B, Bhandari M, Burrough E, Cooper V, **Gauger PC**, Harmon K, Main R, Pillatzki A, Schwartz K, Stevenson G, Zhang J, Yoon KJ. Pathogenesis of porcine epidemic diarrhea virus in CDCD neonatal piglets. Proceedings of the 45th American Association of Swine Veterinarians Annual Meeting. Poster 44. Dallas, TX. March 1-4, 2014.
7. O'Brien B, Fleck R, **Gauger PC**, Magstadt D. Impact of FosterTM PRRS vaccination on contemporary PRRSV challenge. 2014 Allen D. Lemans Swine Conference. St. Paul, MN. September 13-16, 2014.
6. Wilberts BL, Schwartz KJ, **Gauger PC**, Burrough ER. Evidence of oxidative injury in pigs with melanosis coli. Scientific Poster Session. 64th Annual Meeting of the American College of Veterinary Pathologists, Montreal, Canada, November 16 – 20, 2013.
5. **#Gauger PC**, Zhang J, Berkland MK, Arruda PA, Madson DM. FosterTM PRRSV exposure in gestating swine and congenital infection. 2013 Allen D. Lemans Swine Conference. St. Paul, MN. September 15-17, 2013.
4. Zhang J, **Gauger PC**, Berkland MK, Chen Q, Haney D, Thomas J. Evaluation of FosterTM PRRS vaccine shedding in growing pigs following vaccination. 2013 Allen D. Lemans Swine Conference. St. Paul, MN. September 15-17, 2013.
3. Rotolo M, Abate S, Kittawornrat A, **Gauger PC**, Harmon K, Main R, Yoon KJ, Zimmerman J. Work in Progress: Improved PCRs for Oral Fluids. American Association of Swine Veterinarians Annual Meeting. San Diego, CA. March 2-5 2013.
2. Platt R, **Gauger PC**, Kimura K, Roth JA, Vincent AL, Loving CL, Zanella EL, Lager KM, Kehrli ME. Comparison of humoral and cellular immune responses to inactivated swine influenza virus vaccine in weaned pigs. Conference of Research Workers in Animal Disease. Chicago, IL. December 5-7, 2010. Abstract #085P.
1. Kehrli ME, **Gauger PC**, Cheung AK, Vincent AL, Lager KM. Discovery of antinuclear antibodies in pigs infected with porcine circovirus type 2. 21st International Pig Veterinary Society. Vancouver, Canada. July 18-21, 2010. Volume 1, p. 332.

INVITED ORAL PRESENTATIONS / LECTURES

International

5. Highly pathogenic avian influenza virus outbreak and diagnostics at the Iowa State University Veterinary Diagnostic Laboratory. American Association of Veterinary Laboratory Diagnosticians Annual Meeting Virology Committee panel, Providence, RI. October 23, 2015.
4. Influenza A virus in swine: diversity, diagnostics and interpretation. Annual Meeting of the American Association of Swine Veterinarians, Orlando, FL. March 2, 2015.
3. Porcine epidemic diarrhea virus: the North American Experience. Institution of Permanent Education (IPV) in Veterinary Medicine. University of Ghent; Ghent, Belgium December 12, 2014.
2. Comparison of the humoral and cell-mediated immune response to inactivated and modified live influenza A virus vaccines in swine. International symposium on vaccines against antigenically variable viruses (VAAVV). Iowa State University, Ames, IA. June 18-20, 2014.
1. "You make the call": A rapid-fire case-based review. Seminar #2: It's Not All Bugs and Drugs, 44th Annual Meeting of the American Association of Swine Veterinarians, San Diego, CA. March 2, 2013.

National

11. Influenza A Virus in Swine in the United States: genetic diversity, diagnostics and disease. Nanjing Agricultural University, April, 2016.
10. Influenza A virus in swine: Influenza Diagnostics - The Antigen, Antibody and Avian Influenza Virus in Swine. Boehringer Ingelheim Technical Services Meeting. Honey Creek Resort, Moravia, IA. May 18-19, 2015.
9. Influenza A virus in swine: Diagnostic data from the ISU Veterinary Diagnostic Laboratory. Symposium of Computational Resources for Swine Viral Diseases. Ames, IA. June 8-11, 2015.
8. Influenza A virus in swine IAV-S: Overview. Boehringer Ingelheim Technical Services Meeting. St. Joseph, MO. January 7, 2015.
7. The changing face of Influenza A viruses in swine (IAV-S) a look at the ISU-VDL USDA IAV-S surveillance data. 22st Annual Swine Disease Conference for Swine Practitioners. IA State University, Ames, IA. November 13-14, 2014.
6. Porcine reproductive and respiratory syndrome virus: diagnostics, sequencing and dendrogram analysis. Merck Technical services webinar. Ames, IA. October 27, 2014.
5. Porcine epidemic diarrhea virus in North America. Boehringer Ingelheim Seminar. World Pork Expo, Des Moines, IA. June 5, 2014.
4. Understanding and interpreting swine influenza virus sequencing and it's applicability in the field. Boehringer Ingelheim Veterinary Liaison Conference Call. Ames, IA. June 21, 2013.
3. Swine influenza virus: epidemiology and vaccine concerns. Swine Disease Conference for Swine Practitioners. Ames, IA. November 10-11, 2011.

2. Porcine Respiratory Disease Complex trends and diagnostics for practitioners. Swine Disease Conference for Veterinarians. Ames, IA. November 5-6, 2009.
1. Experimental infection with PCV2a and PCV2b in gnotobiotic swine. Swine Disease Conference for Swine Practitioners. Ames, IA. November 6-7, 2008.

State

7. Porcine epidemic diarrhea virus: the American experience. Iowa Farm Bureau Annual Meeting: educational seminar. Des Moines, IA. December 2, 2014.
6. Porcine epidemic diarrhea virus: what have we learned? Spring 2014 Purina Swine Feed Sales Meeting. Des Moines, IA. March 25-27, 2014.
5. Porcine epidemic diarrhea virus: disease, diagnostics and future perspectives. Iowa Veterinary Medical Association Winter Conference. Ames, IA. February 12, 2014.
4. Porcine respiratory and enteric disease diagnostics: utilizing appropriate tools for success. IA Pork Regional Conferences/IA Pork Producers Association. Carroll, Sheldon, Nashua, Iowa City, IA. February 25, 26, 27, 28, 2013.
3. Diagnostic considerations in postweaning enteric disease detection and diagnosis. 20th Annual Swine Disease Conference for Swine Practitioners. Ames, IA. November 8-9, 2012.
2. Trends in Antibiotic Sensitivity Patterns at the ISU Vet Diagnostic Lab. 97th Annual Meeting Lewis and Clark Veterinary Conference sponsored by Interstate Veterinary Medical Association, Inc. South Sioux City, NE. October 5-7, 2011.
1. Swine Viral Disease Update. 96th Annual Meeting Lewis and Clark Veterinary Conference/Interstates Veterinary Association. South Sioux City, NE, October 6-8, 2010.

Regional

8. Emerging Infectious Diseases and Highly Pathogenic H5N2 in the United States. Zoetis New Veterinary Network Teleconference. Ames, IA. July 9, 2015.
7. PCV2 update, *Mycoplasma hyopneumoniae* and influenza A virus diagnostics. Merck Animal Health G2 Launch Meeting. Okoboji, IA. October 10, 2013.
6. Iowa State University Diagnostic Laboratory Update and Case Presentation. North Central IA Veterinary Medical Association Annual Meeting. Fort Dodge, IA. May 9, 2011.
5. Importance of porcine respiratory diagnostics: utilizing appropriate tools for success. Boehringer-Ingelheim Swine Seminar. Aberdeen, SD, August 15, 2012. Mitchell, SD, August 16, 2012.
4. Characterization of vaccine associated enhanced respiratory disease (VAERD) in swine administered an inactivated δ -cluster influenza vaccine and challenged with pandemic A/H1N1 virus. Boehringer-Ingelheim Seminar. Ames, IA. April 25, 2012.

3. ISU-VDL overview and diagnostic cases. Northcentral IA Veterinary Association Conference. Fort Dodge, IA. May 10, 2011.
2. Interesting Diagnostic Cases at the ISU-VDL. Northcentral IA Veterinary Association Conference. Fort Dodge, IA, July 17, 2009.
1. Characterization of the leukogram in PCV2 infected germ-free pigs. 46th North Central Veterinary Laboratory Diagnosticians Conference. Ames, IA, June 7-8, 2007.

Local

3. Influenza A virus in swine: Vaccine associated enhanced respiratory disease (VAERD) & immune response to inactivated and live-attenuated vaccines in swine. National Animal Disease Center Noon Seminar. Ames, IA. April 16, 2012.
2. Influenza A virus in swine: epidemiology and ecology. Mobley Seminar. Ames, IA. December 5, 2012.
1. Diagnosing lameness in swine. ISU Swine Peer Group Meeting. Ames, IA. May 13, 2009.

SCIENTIFIC PRESENTATIONS / INSTITUTIONAL SEMINARS

1. Diagnostic submission guidelines and process, porcine respiratory, enteric, multisystemic and reproductive disease seminar. North Carolina State University College of Veterinary Medicine Swine Selective. North Carolina State University, Raleigh, NC. April 24 – 26, 2013.

PATENTS & INTELLECTUAL PROPERTY DISCLOSURES

1. Isolation of porcine epidemic diarrhea virus U.S. variant strain in cell culture. (2014). Inventors: Jianqiang Zhang, Qi Chen, **Phillip Gauger**, and Darin Madson. Iowa State University Research Foundation (ISURF) #04241

TEACHING RESPONSIBILITIES

Instructor-in-charge:

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|--------------|-----------------------------------------------------------------------------------------------|
| 2012-Present | Diagnostic Laboratory Practicum (VDPAM 455), “Molecular Diagnostics”. Co-instructor-in-charge |
| 2013-Present | Veterinary Microbiology and Preventive Medicine Special Topics (VMPPM 699), variable credits. |

Lecturer:

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|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2015 | Virology (MICRO 408), “Techniques in classical virology”. |
| 2013-Present | Introduction to Diagnostic Medicine (VDPAM 456X), “Optimizing detection of viruses: diagnostic virology”. |
| 2013 – 2014
2009 | Veterinary Technician Internship Program (VTIP), “Molecular Diagnostics”
Veterinary Diagnostic and Production Animal Medicine (VDPAM 340). Clinical Foundations I. |

RESEARCH PROPOSALS / GRANTS / CONTRACTS FUNDED

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- * Denotes a student mentored, served as major professor or graduate committee member.
 - Denotes the level of participation or assistance provided to the study and/or manuscript.
25. Main R, Rossow S, **Gauger P**, Harmon K, Marthaler D, Vannucci F, Zhang J. Expedited look into the prevalence of Senecavirus A in US Swine. Swine Health Information Center.
 - Requested \$50,000 / Funded \$50,000; 2015
 - Concept development, sample acquisition, designed testing strategies for sample types
 24. **Gauger PC**, Sato Y, Harmon KM, Zhang J, Wilberts B, Cardona C, Main R, Yoon KJ. Evaluation of alternative environmental samples matrices for avian influenza virus surveillance and stability in commercial poultry facilities. Iowa State University Egg Industry Center.
 - Requested \$43,168 / Funded \$43,168; 2015-2016
 - Lead author of grant, concept development, experimental design, designed testing strategies for sample types
 23. Sato Y, Yoon KJ, Zhang J, **Gauger PC**, Main R, Harmon KM, Beilke E, Canon A, Girgis G, Kelly J, Wilson D, Porter R. Evaluation of Feedstuffs for the Presence of Avian Influenza Virus (AIV) Collected from Feed Mills and Poultry Farms and their Role in Spreading of AIV. Iowa State University Egg Industry Center.
 - Requested \$45,297 / Funded \$45,297; 2015-2016
 - Experimental design, concept development, data collection
 22. Yoon KJ, Adelman JS, Sato Y, Blanchong J, **Gauger PC**, Zhang J, Li G, Main R, Beilke E, Canon A, Colboth E, Wisdom J. Role of Terrestrial Wild Birds, Rodents, and Insects in Spreading Avian Influenza Virus to Commercial Layer Operations. Iowa State University Egg Industry Center.
 - Requested \$119,866 / Funded \$119,866; 2015-2016
 - Diagnostic testing, data acquisition
 21. Rademacher C, Holtkamp D, Karriker L, **Gauger PC**. Efficacy of Zoetis PEDV vaccine in reducing clinical impact of PEDV on chronically affected breeding farm. Zoetis, LLC.
 - Requested \$59,078 / Funded \$59,078; 2015-2016
 - Experimental design, diagnostic testing, data collection
 20. Jones C, Stark C, Huss A, Main R, **Gauger PC**, Zhang J, Woodworth J, Dritz S, Tokach M. Evaluating alternative chemical mitigants to prevent PEDv recontamination of swine feed and ingredients. National Pork Board.
 - Requested \$77,119 / Funded \$77,119; 2014-2015
 - Supervise animal work, conduct testing, data collection
 19. Woodworth J, Stark C, Main R, Zhang J, Jones C, **Gauger PC**, Dritz S, Tokach M. Utilizing feed sequencing as a biosecurity intervention for preventing PEDV cross contamination in the feed manufacturing process. National Pork Board.
 - Requested \$99,800 / Funded \$99,800; 2014
 - Supervised animal work, conduct testing, data collection
 18. Zhang J, Gimenez-Lirola LG, Zimmerman JJ, **Gauger PC**, Madson DM, Main R, Baum D. Generation of specimens of precisely known coronavirus infection status for the development and validation of highly-specific porcine coronavirus antibody assays. Iowa Pork Producers Association.
 - Requested \$142,977 / Funded \$110,368; 2014 – 2015

- In progress: Sample collection
17. *Chen Q, Zhang J, Madson DM, **Gauger PC**. Evaluation of the pathogenesis differences of PEDV original and variant strains and examination of the cross-protective immunity between two strains. Iowa Pork Producers Association.
 - Requested \$97,508 / Funded \$97,508; 2014 – 2015
 - Experimental design, histopathology/pathology, data collection, manuscript review
 16. Zhang J, **Gauger PC**, Burrough E, Madson D, Gimenez-Lirola L, Yoon KJ. Effect of porcine epidemic diarrhea virus infectious doses on outcomes of infection in naïve neonatal piglets and weaned pigs. Iowa Pork Producers Association.
 - Requested \$57,603 / Funded \$57,603; 2014 – 2015
 - Concept design and development, histopathology/pathology, data collection, manuscript review
 15. **Gauger PC**, Magstadt D, Zhang J. Evaluation of FosterTM PRRSV serum neutralizing antibodies against contemporary lineage 1 PRRSV and challenge of conventional, naïve pigs with contemporary lineage 1 PRRSV / Evaluation of cross-protection in Foster PRRSV vaccinated conventional swine challenged with a contemporary, heterologous lineage 1 PRRSV. Zoetis LLC.
 - Requested \$70,799 / Funded \$70,799; 2014
 - Lead author of grant, experimental design, conduct testing, histopathology/pathology, supervised animal work, data collection, data analysis, manuscript preparation
 14. Dewell GA, Engelken T, **Gauger PC**, Phillips P. Surveillance of cull aged bulls for Trichomoniasis in IA sale barns. IA Veterinary Medical Association.
 - Requested \$17,730 / Funded \$17,730; 2014 – 2015
 - Diagnostic testing, manuscript review
 13. Gourapura R, **Gauger PC**, Zhang J. Evaluation of mucosal B cell response to PEDV in infected sows. National Pork Board.
 - Requested \$81,442 / Funded \$81,442; 2014-2015
 - Concept development, sample collection, manuscript review
 12. Zhang J, Chen Q, and **Gauger P**. *In vitro* evaluation of serological cross-reactivity and cross-neutralization between the PEDV original and variant strains. Zoetis, LLC.
 - Requested \$17,661 / Funded \$17,661; 2014
 - Sample and data collection, manuscript review
 11. Woodworth J, Stark C, Hesse R, Main R, Zhang J, Dritz S, Tokach M, **Gauger PC**. Determining the impact of conditioning time and temperature in pelleted diets on PEDv survivability in complete swine diets. National Pork Board.
 - Requested \$155,519 / Funded \$130,519; 2014
 - Supervised animal work, data collection
 10. Zhang J, **Gauger PC**, Harmon KM, Chen Qi. Evaluation of commercial rapid PED, TGE, and Rota Ag Test Kits for detecting virus pathogens in porcine feces. Zoetis LLC.
 - Requested \$24,590/ Funded \$24,590; 2013 – 2014
 - Sample collection, manuscript review
 9. Zhang J, **Gauger PC**, Li G, Main R. Development and evaluation of a live attenuated porcine epidemic diarrhea virus vaccine. Zoetis LLC.

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- Requested \$340,241/ Funded \$340,241; 2013 – 2015
 - Concept development and experimental design, histopathology/pathology, data collection, manuscript review
8. Pillatzki AE, **Gauger PC**, Madson DM, Burrough ER, Zhang J, Magstadt D, Arruda PH, Yoon KJ, Stevenson GW. Feed Transmission of porcine epidemic diarrhea virus to neonatal piglets. American Association of Swine Veterinarians/National Pork Board.
 - Requested \$8,970/ Funded \$8,970; 2013 – 2014
 - Co-author of grant, concept development and experimental design, conduct testing, histopathology/pathology, supervised animal work, data collection, data analysis, manuscript preparation, manuscript review
 7. Madson DM, Stevenson GW, Yoon KJ, Arruda PH, Burrough ER, Cooper VL, **Gauger PC**, Harmon KM, Pillatzki AE, Schwartz KJ, Zhang J. Characterization of the pathogenesis of porcine epidemic diarrhea virus (PEDv) in neonates and weaned pigs and generation of reference diagnostic specimens. Iowa Pork Producers Association/National Pork Board; 2013.
 - Requested \$113,920/ Funded \$113,920; 2013 - 2014.
 - Data collection, manuscript review
 6. **Gauger PC**, Zhang J. Evaluation of FosterTM PRRSV vaccine protection against a contemporary PRRSV challenge and comparison of PRRSV shedding in vaccinated and non-vaccinated growing pigs. Zoetis LLC.
 - Requested \$162,488 / Funded \$162,488; 2013 – 2014
 - Lead author of grant, experimental design, conduct testing, histopathology/pathology, supervised animal work, data collection, data analysis, manuscript preparation, manuscript review
 5. Yoon KJ, Zhang J, Harmon K, **Gauger PC**, Johnson J, Schwartz KJ, Madson DM, Burrough E, Stevenson G. Porcine epidemic diarrhea (PED) disease: development of tests and reagents for diagnosis and disease management. Iowa Pork Producers Association.
 - Requested \$77,769/ Funded \$77,769; 2013 – 2014
 - Sample and data collection
 4. Balasuriya U, Cook RF, Zhang J, **Gauger PC**, Snijder E. Development of recombinant vaccines against porcine reproductive and respiratory syndrome (PRRS): equine arteritis virus-vectored chimeric vaccines against PRRSV. Merial Animal Health.
 - Requested \$362,109/ Funded \$362,109; 2013 – 2015
 - Concept development, data collection, testing strategies
 3. Tuggle CK, Dekkers JCM, Ross J, Cunnick J, Ellinwood NM, Wannemuehler MJ, **Gauger PC**. Characterization and utilization of a novel immune-compromised pig for biomedical modeling. Bailey Research Career Development Award. Iowa State University.
 - Requested \$50,000 / Funded \$50,000; 2012 – 2015
 - Histopathology/pathology
 2. **Gauger PC**, Vincent AL, Kitikoon P, Baker RB, Zhang J, Wang C. Detection and characterization of influenza A virus endemic circulation in neonatal and nursery pigs in a farm using routine influenza vaccination. Iowa Pork Producers Association.
 - Requested \$139,540 / Funded \$70,000; 2012 – 2013
 - Lead author of grant, experimental design, conduct testing, histopathology/pathology, supervised animal work, data collection, data analysis, manuscript preparation, manuscript review

1. **Gauger PC**, Zhang J. Evaluation of modified live PRRSV 19S1.21 in late gestation swine from exposure to farrowing, Part 1. Pfizer Animal Health.
 - Requested \$120,883 / Funded 120,883; 2011 – 2012
 - Lead author of grant, experimental design, conduct testing, histopathology/pathology, supervised animal work, data collection, data analysis, manuscript preparation, manuscript review

RESEARCH PROPOSALS OR GRANTS SUBMITTED

7. Dennison D, Yoon KJ, Bindner H, **Gauger PC**, Natoli S. Use of Enterade® as supportive therapy for rotaviral diarrhea in pigs. USDA-NIFA-SBIR.
 - Requested \$99,937.00
6. **Gauger PC**, Vincent A, Rajao D, Anderson T, Abente E. Heterologous prime-boost vaccination protocols using whole inactivated influenza A virus vaccines to drive improved heterologous cross-protection. National Pork Board.
 - Requested \$78,420
5. Linhares DC, **Gauger PC**, Levis I, Rademacher C. Developing an Influenza vaccination decision tree for breeding herds. National Pork Board.
 - Requested \$88,967
4. Rumbelha W, **Gauger PC**. Evaluating the impact of low level hydrogen sulfide exposure on pathogenesis of zoonotic and endemic infectious swine diseases. National Pork Board.
 - Requested \$60,804
3. Li G, **Gauger PC**, Sahin O, Krull A. Identification of Virulence Genes of Streptococcus suis through Large-scale Genome Sequencing. National Pork Board.
 - Requested \$74,730
2. Vincent A, Rajao D, Abente E, Anderson T, **Gauger PC**. Adaptation of a human seasonal H3 influenza A virus to efficiently infect and replicate in the swine host. National Pork Board.
 - Requested \$41,742
1. Opriessnig T, **Gauger PC**, Gerber P. Effect of gut health on influenza A virus (IAV) humoral immune response and vaccine efficacy. National Pork Board.
 - Requested \$66,000

RESEARCH PROPOSALS OR GRANTS NOT FUNDED

22. Baum DH, Gimenez-Lirola L, Rademacher C, Wang C, Zimmerman JJ, **Gauger PC**, Holtkamp D, Karriker L, Ramirez A. Description of Pathogen Ecology in Wean-To-Finish Commercial Swine Production. USDA-NIFA AFRI Animal Health & Disease
 - Requested \$499,690; 2015 – 2018
21. **Gauger PC**, Gourapura R, Yoon KJ, Miller C, Zhang J, Madson DM, Zimmerman JJ. Vaccine Strategies And Platforms For Enhanced Mucosal Immunity Against Porcine Epidemic Diarrhea Virus. USDA-NIFA AFRI Animal Health & Disease
 - Requested \$500,000; 2015 – 2018

20. Magstadt DM, **Gauger PC**, Madson DM, Burrough E, Zhang J, Zimmerman JJ. Comparison of cross-protection elicited by single dose vs. multiple dose (both sequential and rotational) PRRSV vaccine protocols against challenge with recently circulating, heterologous PRRSV field isolates. National Pork Board.
 - Requested \$59,385; 2015
19. Li G, Zhang J, Yoon KJ, **Gauger PC**, Harmon KM, Sato Y, Main R. Molecular epidemiology of Highly Pathogenic Avian Influenza Viruses in Iowa toward Understanding of Area/Regional Spreading of the Virus. Iowa State University Egg Industry Center.
 - Requested \$49,622; 2015
18. Halbur PG, **Gauger PC**, Vincent AL, Carriquiry A, Lasley P, Friedberg I. Development of computational tools and bioinformatics systems to characterize, monitor and control emerging and evolving viruses in swine through data driven science. Iowa State University Presidential Initiative for Interdisciplinary Research.
 - Requested \$542,508; 2015-2018
17. **Gauger PC**, Vincent AL, Rajao D, Abente E. Regional serosurveillance of H1 and H3 swine cluster and human seasonal influenza A viruses circulating in United States swine. National Pork Board.
 - Requested \$49,900; 2014-2015
16. Zhang J, Zimmerman JJ, Gimenez-Lirola L, **Gauger PC**, Burrough ER, Madson DM, Wang C, Main R. Evaluation of lactogenic immunity in pregnant swine induced by PEDV through different routes of administration and the correlation with protective immunity in challenged piglets. National Pork Board.
 - Requested \$149,269; 2014-2015
15. **Gauger PC**, Gourapura R, Yoon KJ, Miller C, Zhang J, Madson DM, Zimmerman JJ. Vaccine Strategies And Platforms For Enhanced Mucosal Immunity Against Porcine Epidemic Diarrhea Virus. USDA-NIFA AFRI Animal Health & Disease
 - Requested \$500,000; 2014 - 2017
14. **Gauger PC**, Gourapura R, Zhang J, Madson DM, Magstadt D. Nanoparticle entrapped inactivated PEDV vaccine to induce maternal antibody mediated protection in neonatal and weaned piglets. National Pork Board.
 - Requested \$98,876; 2014 - 2015
13. Chen Q, Zhang J, Madson DM, **Gauger PC**. Evaluation of the pathogenesis differences of PEDV original and variant strains and examination of the cross-protective immunity between two strains. National Pork Board.
 - Requested \$90,356; 2014 - 2015
12. Zhang J, Burrough ER, **Gauger PC**, Madson DM, Gimenez-Lirola L, Yoon KJ. Determination of minimum infectious dose of porcine epidemic diarrhea virus in naïve neonatal piglets. IA Livestock Health Advisory Council Grant Program; 2014.
 - Requested \$25,000; 2014 - 2015
11. **Gauger PC**, Zhang J, Burrough ER, Madson DM, Gimenez-Lirola L, Yoon KJ. Effect of porcine epidemic diarrhea virus infectious dose on outcomes of infection in naïve weaned piglets. IA Livestock Health Advisory Council Grant Program; 2014.

- Requested \$25,000; 2014 - 2015
10. Zhang J, Burrough ER, **Gauger PC**, Madson DM, Yoon KJ. Effects of porcine epidemic diarrhea virus infectious doses on outcomes of infection in naive neonatal piglets and weaned pigs. American Association of Swine Veterinarians Foundation; 2014.
 - Requested \$30,000; 2014 – 2015
 9. Zhang J, Yoon KJ, Harmon KM, **Gauger PC**, Stevenson G, Main R. Development and optimization of procedures for isolation and propagation of porcine epidemic diarrhea virus. National Pork Board.
 - Requested \$17,200; 2013 - 2014
 8. Zhang J, Yoon KJ, Harmon KM, Gauger PC, Stevenson G, Main R. Molecular epidemiology of porcine epidemic diarrhea virus circulating in US swine. National Pork Board.
 - Requested \$61,800; 2013 - 2014
 7. Zhang J, Gauger PC, Balasuriya U. Application of equine and porcine chimeric arteriviruses to determine the porcine reproductive and respiratory syndrome virus proteins responsible for the host range and induction of protective immunity. National Pork Board.
 - Requested \$107,616; 2013 - 2014
 6. Sandbulte M, Gauger PC, Roth J, Platt R, Zhang J. Live and inactivated swine influenza vaccines as prophylaxis against the natural transmission of contemporary H3N2 strains. National Pork Board.
 - Requested \$75,000; 2013 - 2014
 5. Harmon KM, Gauger PC, Zhang J, Pillatzki A, Yoon KJ, Zimmerman JJ, Stevenson G, Main R. Evaluation of performance of 4 different PCR tests for detection of PEDv in feces and oral fluids and evaluation effect of freeze/thaw cycle on testing repeatability. National Pork Board.
 - Requested \$50,000; 2013-2014
 4. Zhang J, **Gauger PC**, Balasuriya UBR. Evaluation of replication, immunogenicity and protection efficacy of EAV-PRRSV chimeric viruses expressing GP5 and/or M ectodomains of PRRSV in pigs. IA Pork Producers Association.
 - Requested \$57,000; 2013 – 2014
 3. Zhang J, **Gauger PC**, Balasuriya UBR. Evaluation of replication, immunogenicity and protection efficacy of EAV-PRRSV chimeric viruses expressing GP5 and/or M ectodomains of PRRSV in pigs. IA Livestock Health Advisory Council Grant Program.
 - Requested \$25,000; 2013 – 2014
 2. Gourapura R, **Gauger PC**, Zhang J. Validation of swine oral fluid-based PRRS virus neutralization assay: a potential diagnostic tool to monitor protective PRRS herd immunity. National Pork Board.
 - Requested \$75,000; 2013-2014
 1. **Gauger PC**, Vincent AL, Kitikoon P, Zhang J, Wang C, Baker RB. Detection and characterization of influenza A virus endemic circulation in neonatal and nursery pigs in a farm using routine influenza vaccination. National Pork Board.
 - Requested \$139,540; 2011 - 2012

AD HOC REVIEWER – REFEREED JOURNALS

2015	<i>Toxicologic Pathology</i> Full-length scientific manuscript (1) IHC/Porcine markers <i>Ciencia Rural</i> Full-length scientific manuscript (1) BVDV <i>Virology Journal</i> Review manuscript (1) PEDV <i>Veterinary Science</i> Full-length scientific manuscript (1) PEDV <i>PLoS One</i> Full-length scientific manuscript (2) Influenza
2011, 2014	<i>Journal of Swine Health and Production</i> Full-length scientific manuscript (2) PCV2, IAV-S
2013, 2014	<i>PLoS One</i> Full-length scientific manuscript (2) IAV-S, PRRSV
2014	<i>Veterinary Microbiology</i> Full-length scientific manuscript (2) PRRSV, High Path AIV
2013	<i>Veterinary Pathology</i> Full-length scientific manuscript (1) PCV2

AD HOC REVIEWER – GRANTS

2015	Iowa Livestock Health Advisory Council (ILHAC): Iowa State University.
2014	Ohio Agricultural Research and Development Center (OARDC), SEEDS: OARDC Research Enhancement Competitive Grants Program, Ohio State University.
2009 – 2010	National Pork Board Grants Program.

SPECIAL PROJECTS/FEE FOR SERVICE

7. **Gauger PC**, Welch M, Carlson J. Testing the Effects of Defusion on PEDv in Cell Culture. Provimi North America, Inc.
 - \$1,500; 2015
 - Initiated collaboration, concept development and design, coordinate and conduct laboratory testing
6. **Gauger PC**, Zhang J, Harmon KM. Boehringer Ingelheim Fellowship in Veterinary Diagnostic and Production Animal Medicine with emphasis on the diagnosis and control of viral diseases of swine. Boehringer Ingelheim Vetmedica, Inc.
 - \$100,000; 2015 – 2017
 - Establish fellowship with BIVI, supervise post-doctoral position, concept and development of swine viral disease research and diagnostic testing, novel virus investigation
5. **Gauger PC**, Derscheid R, Madson DM, Arruda P. Zoetis Fostera PRRSV management of sample selection and necropsy. Zoetis.
 - \$4,000; 2015
 - Coordinated and managed the necropsy for Zoetis PRRSV research trial
4. **Gauger PC**, Zhang J, Burrough E, Baker RB. Evaluation of mortality in PEDV challenged piglets administered Enterade oral rehydration product. Entrinsic Health Solutions LLC.

- \$23,794; 2015
 - Concept development and experimental design of research to evaluate the effectiveness of Enterade® in PEDV-challenged piglets (glucose diet), managed piglet experiment, managed laboratory staff
3. **Gauger PC**, Zhang J, Burrough E, Baker RB. Evaluation of Enterade oral rehydration product for PEDV in neonatal, weaned piglets: proof of concept. Entrinsic Health Solutions LLC.
 - \$11,000; 2014
 - Established collaboration with Entrinsic health solutions, concept development and experimental design of research to evaluate the effectiveness of Enterade® in PEDV-challenged piglets (non-glucose diet), manage piglet experiment, manage laboratory staff
 2. **Gauger PC**, Welch M. Nanosterosol sanitizer effect of PEDV in cell culture. Nano Nano, LLC.
 - \$6,000; 2014
 - Concept development and experimental design, manage and conduct testing, data collection and analysis, virus isolation
 1. **Gauger PC**, Welch M. Effect of Fucoidan on PEDV in cell culture. Marinova Pty Ltd.
 - \$1,220; 2014
 - Concept development and experimental design, manage and conduct testing, data collection and analysis, virus isolation

SPECIAL PROJECTS/ISU VDL

	Year	Project	Client	Responsibility	Amount
20.	2015	PEDV	Vet Resources, Inc.	Histopathology /lesion score	\$1,446
19.	2015	Draxxin	Zoetis	Gross & histopathology evaluation	\$948
18.	2015	Slaughter Check	Boehringer-Ingelheim	Histopathology /lesion score	\$2,759
17.	2015	PEDV	Vet Resources, Inc.	Histopathology /lesion score	\$1,792
16.	2015	PEDV	Merck	Histopathology /lesion score	\$955
15.	2014	PEDV	Merck	Histopathology /lesion score	\$446
14.	2014	PEDV	Vet Resources, Inc.	Histopathology /lesion score	\$1,139
13.	2014	PEDV	Vet Resources, Inc.	Histopathology /lesion score	\$3,860
12.	2014	M. hyopneumoniae	Vet Resources, Inc.	Histopathology /lesion score	\$76
11.	2014	M. hyopneumoniae	Vet Resources, Inc.	Histopathology /lesion score	\$35
10.	2014	M. hyopneumoniae	Vet Resources, Inc.	Histopathology /lesion score	\$45
9.	2014	Injection Site	Merck	Histopathology /lesion score	\$392
8.	2014	PRRSV	Murphy Brown	PRRSV virus neutralization assay	\$919
7.	2014	Injection Site	Merck	Histopathology /lesion score	\$1,040
6.	2013	PEDV	Midwest Veterinary	Histopathology /lesion score	\$1,319
5.	2013	M. hyopneumoniae	Zoetis	Histopathology evaluation	\$1,678
4.	2013	Influenza	Vet Resources, Inc.	Histopathology /lesion score	\$7,952
3.	2013	Influenza	University of Kentucky	Histopathology /lesion score	\$283
2.	2012	M. hyop/PCV	Pfizer, Inc.	Histopathology /lesion score	\$2,898
1.	2012	PRRSV	Pfizer, Inc.	Histopathology /lesion score	\$6,493

Total	\$36,476
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NEWS ARTICLES / INTERVIEWS / IMPACT

- Live attenuated influenza vaccines may have advantages for use in swine, according to IA State University research. *IA State University New Service*. January 16, 2015.
 - Distribution:
 - National Hog Farmer. <http://nationalhogfarmer.com/animal-well-being/intranasal-live-attenuated-influenza-vaccines-show-advantages-swine>.
 - Phys.Org. <http://phys.org/news/2015-01-attenuated-influenza-vaccines-advantages-swine.html>.
 - MyInforms.com. <http://myinforms.com/en-us/a/9810527-live-attenuated-influenza-vaccines-may-have-advantages-for-use-in-swine/>.
 - Farmstead media group; <https://www.spreaker.com/user/foodandfarm/phillip-gauger-swine-flu-vaccines>
 - Ames Tribune; <http://amestrib.com/news/isu-researcher-studying-potential-influenza-vaccine-swine>
- Researchers identify new swine flu strain. National Hog Farmer. January 15, 2008. http://nationalhogfarmer.com/health-diseases/scientists_discover_flu_strain.

INSTITUTIONAL SERVICE

College

- 2012-Present Section Leader: Molecular, Virology, Health Assurance Testing Section, Iowa State University College of Veterinary Medicine, Veterinary Diagnostic Laboratory.
- 2015 Search Committee: Director II, Professional and Scientific (Laboratory Animal Resources Director).

Department

- 2015 Search Committee Chair: Clinician, Senior Clinician, Assistant, Associate, or Full Professor (Bacteriology Section Leader).
- 2014 Search Committee: Clinician, Senior Clinician, Assistant, Associate, or Full Professor (Serology Section Leader).
- 2014-Present Strategic Planning Committee: Iowa State University Veterinary Diagnostic Laboratory.
- 2014 Peer Review Committee: Senior Clinician Promotion.
- 2013 Search Committee: Adjunct Instructor.
- 2013 Search Committee: Clinician, Senior Clinician, Assistant, Associate, or Full Professor (Diagnostic Pathologist)

2012 Search Committee: Clinical Microbiology Residency.