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EDUCATION

Ph.D. **Statistics**, with minor in **Epidemiology**, Cornell University, Ithaca, NY, 08/2006

Dissertation: ROC Analysis for Cross-Sectional and Longitudinal Disease Diagnostic Data without a Gold Standard Test: Application to Johne's Disease in Dairy Cows
Advisor: Bruce W. Turnbull

M.S. **Statistics**, Cornell University, Ithaca, NY, 12/2004

B.S. **Statistics and Probability**, Peking University, Beijing, P.R. China, 07/2001

EMPLOYMENT

08/2022 – present	Professor, Department of Veterinary Diagnostic and Production Animal Medicine, Department of Statistics, Iowa State University
08/2015 – 08/2022	Associate Professor, Department of Veterinary Diagnostic and Production Animal Medicine, Department of Statistics, Iowa State University
01/2009 – 08/2015	Assistant Professor, Department of Veterinary Diagnostic and Production Animal Medicine, Department of Statistics, Iowa State University
08/2007 – 12/2008	Assistant Professor, Department of Biostatistics, Department of Statistics, University of Kentucky
08/2006 – 05/2007	Visiting Assistant Professor, Department of Mathematics, Cornell University
08/2006 – 07/2007	Postdoctoral Associate with <u>Yrjö T. Gröhn</u> , Department of Population Medicine and Diagnostic Sciences, College of Veterinary Medicine, Cornell University

RESEARCH INTERESTS

- Biostatistics and Epidemiology
- Design of Animal Disease Surveillance
- Systematic Reviews and Network Meta-analyses
- Bioinformatics
- Diagnostic Test Evaluation
- Machine Learning and Statistical Learning

PEER-REVIEWED JOURNAL ARTICLES (* Indicates Wang student)

200. Silva, A.P.S.P., Storino, G.Y., Ferreyra, F.S.M., Zhang, M., Miller, J.M., Harmon, K.M., Gauger, P.C., Witbeck, W., Doolittle, K., Zimmerman, S., **Wang, C.**, Derscheid, R.J., Clavijo, M.J., Arruda, B.L., Zimmerman, J.J. (2022) Effect of testing protocol and within-pen prevalence on the detection of *Mycoplasma hyopneumoniae* DNA in oral fluid samples. *Preventive Veterinary Medicine*, 204:105670. DOI:10.1016/j.prevetmed.2022.105670.
199. Massey, N., Shrestha, D., Bhat, S.M., Padhi, P., **Wang, C.**, Karriker, L.A., Smith, J.D., Kanthasamy, A.G., Charavaryamath, C. (2022) Mitoapocynin Attenuates Organic Dust Exposure-Induced Neuroinflammation and Sensory-Motor Deficits in a Mouse Model. *Frontiers in Cellular Neuroscience*, 13;16:817046. DOI:10.3389/fncel.2022.817046.
198. Welch, M., Krueger, K., Zhang, J., Piñeyro, P., Magtoto, R., **Wang, C.**, Giménez-Lirola, L., Strait, E., Mogler, M., Gauger, P. (2022) Detection of porcine parainfluenza virus type-1 antibody in swine serum using whole-virus ELISA, indirect fluorescence antibody and virus neutralizing assays. *BMC Veterinary Research*, Mar 21;18(1):110.. DOI:10.1186/s12917-022-03196-6.
197. Bhat, S.M., Massey, N., Shrestha, D., Karriker, L.A., Jelesijević, T., **Wang, C.**, Charavaryamath, C. (2022) Transcriptomic and ultrastructural evidence indicate that anti-HMGB1 antibodies rescue organic dust-induced mitochondrial dysfunction. *Cell and Tissue Research*, May;388(2):373-398. DOI:10.1007/s00441-022-03602-3.
196. Gage, M., Rao, N.S., Samidurai, M., Putra, M., Vasanthi, S.S., Meyer, C., **Wang, C.**, Thippeswamy, T. (2022) Soman (GD) Rat Model to Mimic Civilian Exposure to Nerve Agent: Mortality, Video-EEG Based Status Epilepticus Severity, Sex Differences, Spontaneously Recurring Seizures, and Brain Pathology. *Frontiers in Cellular Neuroscience*, Feb 7;15:798247. DOI:10.3389/fncel.2021.798247.
195. Silva, A.P.S.P., Storino, G.Y., Ferreyra, F.S.M., Ferreyra, F.S.M., ***Zhang, M.**, Fano, E., Polson, D., **Wang, C.**, Derscheid, R.J., Zimmerman, J.J., Clavijo M.J., Arruda, B.L. (2022) Cough associated with the detection of *Mycoplasma hyopneumoniae* DNA in clinical and environmental specimens under controlled conditions. *Porcine Health Management*, 8, 6. DOI:10.1186/s40813-022-00249-y.
194. ***Zhang, M., Wang, C.**, O'Connor, A. (2021) A Bayesian approach to modeling antimicrobial multidrug resistance. *PLOS ONE*, 16(12): e0261528. DOI:10.1371/journal.pone.0261528.
193. Proctor, A., Cornick, N.A., **Wang, C.**, Mooyottu, S., Arruda, P.A., Kobs, K., Phillips, G.J. (2021) Neonatal Piglets Are Protected from *Clostridioides difficile* Infection by Age-Dependent Increase in Intestinal Microbial Diversity. *Microbiology Spectrum*, 9(2):e0124321. DOI:10.1128/Spectrum.01243-21.
192. ***Hu, D., Wang, C.**, O'Connor, A. (2021) A likelihood ratio test for the homogeneity of between-study variance in network meta-analysis. *Systematic Reviews*, 10, 310. DOI:10.1186/s13643-021-01859-3.
191. Magalhães, E.S., Zimmerman, J.J., Thomas, P., Moura, C.A.A., Trevisan, G., Holtkamp, D.J., **Wang, C.**, Rademacher, C., Silva, G.S., Linhares, D.C.L. (2021) Whole-herd risk factors associated with wean-to-finish mortality under the conditions of a Midwestern USA swine production system. *Preventive Veterinary Medicine*, 18;198:105545. DOI:10.1016/j.prevetmed.2021.105545.

190. *Zhang, M., Wang, C., O'Connor, A.M. (2021) A Bayesian latent class mixture model with censoring for correlation analysis in antimicrobial resistance across populations. *BMC Medical Research Methodology*, 21, 186. [DOI:10.1186/s12874-021-01384-w](https://doi.org/10.1186/s12874-021-01384-w).
189. Welch, M., Park, J., Harmon, K., Zhang, J., Piñeyro, P., Giménez-Lirola, L., *Zhang, M., Wang, C., Patterson, A., Gauger, P.C. (2021) Pathogenesis of a novel porcine parainfluenza virus type 1 isolate in conventional and colostrum deprived/caesarean derived pigs. *Virology*, 563:88-97. [DOI:10.1016/j.virol.2021.08.015](https://doi.org/10.1016/j.virol.2021.08.015).
188. *Hu, D., Cheng, T.Y., *Morris, P., Zimmerman, J., Wang, C. (2021) Active regional surveillance for early detection of exotic/emerging pathogens of swine: A comparison of statistical methods for farm selection, *Preventive Veterinary Medicine*, 187: 105233. [DOI:10.1016/j.prevetmed.2020.105233](https://doi.org/10.1016/j.prevetmed.2020.105233). **Editor's Choice**.
187. *Goren, E., Wang, C., He, Z., Sheflin, A.M., Chiniquy, D., Prenni, J.E., Tringe, S., Schachtman, D.P., Liu, P. (2021) Feature selection and causal analysis for microbiome studies in the presence of confounding using standardization. *BMC Bioinformatics*, 22, 362. [DOI:10.1186/s12859-021-04232-2](https://doi.org/10.1186/s12859-021-04232-2)
186. Cheng, T.Y., Henao-Diaz, A., Poonsuk, K., Buckley, A., van Geelen, A., Lager, K., Harmon, K., Gauger, P., Wang, C., Ambagala, A., Zimmerman, J., Giménez-Lirola, L. (2021) Pseudorabies (Aujeszky's disease) virus DNA detection in swine nasal swab and oral fluid specimens using a gB-based real-time quantitative PCR. *Preventive Veterinary Medicine*, 189:105308. [DOI:10.1016/j.prevetmed.2021.105308](https://doi.org/10.1016/j.prevetmed.2021.105308).
185. Clavijo, M.J., *Hu, D., Krantz, S., Cano, J.P., Pereira Maróstica, T., Henao-Diaz, A., Poeta Silva, A.P.S., Hemker, D., Tapia, E., Zimmerman, S., Fano, E., Polson, D., Fitzgerald, R., Tucker, A., Main, R., Wang, C., Zimmerman, J.J., Rotolo, M.L. (2021) Mycoplasma hyopneumoniae Surveillance in Pig Populations: Establishing Sampling Guidelines for Detection in Growing Pigs. *Journal of Clinical Microbiology*, 59(5):e03051-20. [DOI:10.1128/JCM.03051-20](https://doi.org/10.1128/JCM.03051-20).
184. Stock, M. L., Kleinhenz, M. D., Mazloom, R., Jaber-Douraki, M., Barth, L. A., Van Engen, N. K., Voris, E. A., Wang, C., Coetzee, J. F. (2021). A field trial comparing four oral nonsteroidal anti-inflammatory drugs on controlling caudary dehorning pain and stress in calves. *Translational Animal Science*, 5(2), txab041. [DOI:10.1093/tas/txab041](https://doi.org/10.1093/tas/txab041).
183. Yim-Im, W., Huang, H., Park, J., Wang, C., Calzada, G., Gauger, P., Harmon, K., Main, R., Zhang, J. (2021) Comparison of ZMAC and MARC-145 Cell Lines for Improving Porcine Reproductive and Respiratory Syndrome Virus Isolation from Clinical Samples. *Journal of Clinical Microbiology*, 18;59(3):e01757-20. [DOI:10.1128/JCM.01757-20](https://doi.org/10.1128/JCM.01757-20).
182. Overstreet, A.C., Ramer-Tait, A.E., Suchodolski, J.S., Hostetter, J.M., Wang, C., Jergens, A. E., Phillips, G.J., Wannemuehler, M.J. (2021). Temporal Dynamics of Chronic Inflammation on the Cecal Microbiota in IL-10 Mice. *Frontiers in Immunology*, 11, 585431. [DOI:10.3389/fimmu.2020.585431](https://doi.org/10.3389/fimmu.2020.585431).
181. Cheng, T., Buckley, A., Van Geelen, A., Lager, K., Henao-Díaz, A., Poonsuk, K., Piñeyro, P., Baum, D., *Ji, J., Wang, C., Main, R., Zimmerman, J.J., Giménez-Lirola, L. (2020) Detection of pseudorabies virus antibody in swine oral fluid using a serum whole-virus indirect ELISA. *Journal of Veterinary Diagnostic Investigation*, 32(4):535-541. [DOI:10.1177/1040638720924386](https://doi.org/10.1177/1040638720924386).

180. McQuinn, E.R., Smith, S.A., Viall, A.K., **Wang, C.**, & LeVine, D.N. (2020). Neutrophil extracellular traps in stored canine red blood cell units. *Journal of Veterinary Internal Medicine*, 34(5), 1894–1902. DOI:10.1111/jvim.15876.
179. Trevisan, G., Linhares, L.C.M., Crim, B., Dubey, P., Schwartz, K.J., Burrough, E.R., **Wang, C.**, Main, R.G., Sundberg, P., Thurn, M., Lages, P.T.F., Corzo, C.A., Torrison, J., Henningson, J., Herrman, E., Hanzlicek, G.A., Raghavan, R., Marthaler, D., Greseth, J., Clement, T., Christopher-Hennings, J., Muscatello, D., Linhares, D.C.L. (2020) Prediction of seasonal patterns of porcine reproductive and respiratory syndrome virus RNA detection in the U.S. swine industry. *Journal of Veterinary Diagnostic Investigation*, 32(3):394-400. DOI:10.1177/1040638720912406.
178. ***Hu, D.**, O'Connor, A.M., **Wang, C.**, Sargeant, J.M., & Winder, C.B. (2020). How to Conduct a Bayesian Network Meta-Analysis. *Frontiers in Veterinary Science*, 7, 271. DOI:10.3389/fvets.2020.00271.
177. ***Ji, J., Wang, C.**, Rotolo, M., Zimmerman, J. (2020) Modeling the Regional Disease Spread Over Time Using a Dynamic Spatio-temporal Model with an Application in Porcine Epidemic Diarrhea Virus data collected in Iowa, U.S. *Preventive Veterinary Medicine*, 181:105053. DOI:10.1016/j.prevetmed.2020.105053.
176. ***Ji, J., Wang, C.**, He, Z., Hay, K., Barnes, T., O'Connor, A.M. (2020) Comparing the estimates of effect obtained from statistical causal inference methods: An example using bovine respiratory disease in feedlot cattle. *PLOS ONE*, 15(6):e0233960. DOI:10.1371/journal.pone.0233960.
175. ***Hu, D., Wang, C.**, O'Connor, A.M. (2020) A method of back-calculating the log odds ratio and standard error of the log odds ratio from the reported group-level risk of disease. *PLOS ONE* 15(3): e0222690. DOI:10.1371/journal.pone.0222690.
174. ***Zhang, M., Wang, C.**, O'Connor, A. (2020) A hierarchical Bayesian latent class mixture model with censorship for detection of linear temporal changes in antibiotic resistance. *PLOS ONE* 15(1): e0220427, *Antimicrobial Resistance Collection*. DOI:10.1371/journal.pone.0220427.
173. Meier, N.F., Bai, Y., **Wang, C.**, Lee, D.C. (2020) Validation of a Multielectrode Bioelectrical Impedance Analyzer With a Dual-Energy X-Ray Absorptiometer for the Assessment of Body Composition in Older Adults. *Journal of Aging and Physical Activity*, 8:1-7. DOI:10.1123/japa.2019-0211.
172. Naberhaus, S.A., Krull, A.C., Arruda, B.L., Arruda, P., Sahin, O., Schwartz, K.J., Burrough, E.R., Magstadt, D.R., Matias Ferreyra, F., Gatto, I.R.H., Meiroz de Souza Almeida, H., **Wang, C.**, Kreuder, A.J.. (2020) Pathogenicity and Competitive Fitness of Salmonella enterica Serovar 4,[5],12:i:- Compared to Salmonella Typhimurium and Salmonella Derby in Swine. *Frontiers in Veterinary Science*, 6:502. DOI:10.3389/fvets.2019.00502.
171. Putra, M., Sharma, S., Gage, M., Gasser, G., Hinojo-Perez, A., Olson, A., Gregory-Flores, A., Puttachary, S., **Wang, C.**, Anantharam, V., Thippeswamy, T. (2020) Inducible nitric oxide synthase inhibitor, 1400W, mitigates DFP-induced long-term neurotoxicity in the rat model. *Neurobiology of Disease*, 133:104443. DOI:10.1016/j.nbd.2019.03.031.
170. ***Zhao, J., Wang, C.**, Totton, S.C., Cullen, J.N., O'Connor, A.M. (2019) Reporting and analysis of repeated measurements in preclinical animals experiments. *PLOS ONE*, 14(8): e0220879. DOI:10.1371/journal.pone.0220879.

169. ***Hu, D.**, O'Connor, A., Winder, C., Sargeant, J., **Wang, C.** (2019). How to read and interpret the results of a Bayesian network meta-analysis: A short tutorial. *Animal Health Research Reviews*, 20(2), 106-115. [DOI:10.1017/S1466252319000343](https://doi.org/10.1017/S1466252319000343).
168. Moura, C. A., Johnson, C., Baker, S., Holtkamp, D. J., **Wang, C.**, Linhares, D. C. L. (2019). Assessment of immediate production impact following attenuated PRRS virus vaccination in breeding herds. *Porcine Health Management*, 5:13. [DOI:10.1186/s40813-019-0120-2](https://doi.org/10.1186/s40813-019-0120-2).
167. Atherly, T., Rossi, G., White, R., Seo, Y.J., **Wang, C.**, Ackermann, M., Breuer, M., Allenspach, K., Mochel, J.P., Jergens, A.E. (2019) Glucocorticoid and dietary effects on mucosal microbiota in canine inflammatory bowel disease. *PLOS ONE*; 14(12):e0226780. [DOI:10.1371/journal.pone.0226780](https://doi.org/10.1371/journal.pone.0226780).
166. O'Connor, A., ***Hu, D.**, Totton, S., Scott, N., Winder, C., Wang, B., **Wang, C.**, Glanville, J., Wood, H. White, B., Larson, R., Waldner, C., Sargeant, J. (2019). A systematic review and network meta-analysis of bacterial and viral vaccines, administered at or near arrival at the feedlot, for control of bovine respiratory disease in beef cattle. *Animal Health Research Reviews*, 20(2), 143-162. [DOI:10.1017/S1466252319000288](https://doi.org/10.1017/S1466252319000288).
165. O'Connor, A., ***Hu, D.**, Totton, S., Scott, N., Winder, C., Wang, B., **Wang, C.**, Glanville, J., Wood, H. White, B., Larson, R., Waldner, C., Sargeant, J. (2019). A systematic review and network meta-analysis of injectable antibiotic options for the control of bovine respiratory disease in the first 45 days post arrival at the feedlot. *Animal Health Research Reviews*, 20(2), 163-181. [DOI:10.1017/S1466252320000031](https://doi.org/10.1017/S1466252320000031).
164. Winder, C., Sargeant, J., ***Hu, D.**, **Wang, C.**, Kelton, D., Leblanc, S., T. F. Duffield, J. Glanville, H. Wood, K. J. Churchill, J. Dunn, M. D. Bergevin, K. Dawkins, S. Meadows, B. Deb, M. Reist, C. Moody, O'Connor, A. (2019). Comparative efficacy of teat sealants given prepartum for prevention of intramammary infections and clinical mastitis: A systematic review and network meta-analysis. *Animal Health Research Reviews*, 20(2), 182-198. [DOI:10.1017/S1466252319000276](https://doi.org/10.1017/S1466252319000276).
163. Winder, C., Sargeant, J., ***Hu, D.**, **Wang, C.**, Kelton, D., Leblanc, S., T. F. Duffield, J. Glanville, H. Wood, K. J. Churchill, J. Dunn, M. D. Bergevin, K. Dawkins, S. Meadows, B. Deb, M. Reist, C. Moody, O'Connor, A. (2019). Comparative efficacy of antimicrobial treatments in dairy cows at dry-off to prevent new intramammary infections during the dry period or clinical mastitis during early lactation: A systematic review and network meta-analysis. *Animal Health Research Reviews*, 20(2), 199-216. [DOI:10.1017/S1466252319000239](https://doi.org/10.1017/S1466252319000239).
162. Winder, C., Sargeant, J., ***Hu, D.**, **Wang, C.**, Kelton, D., Godkin, M., Churchill, K. J., O'Connor, A. (2019). Comparative efficacy of antimicrobials for treatment of clinical mastitis in lactating dairy cattle: A systematic review and network meta-analysis. *Animal Health Research Reviews*, 20(2), 229-246. [DOI:10.1017/S1466252319000318](https://doi.org/10.1017/S1466252319000318).
161. Sargeant, J., Bergevin, M.D., Churchill, K., Dawkins, K., Deb, B., Dunn, J., ***Hu, D.**, Logue, C.M., Meadows, S., Moody, C., Novy, A., O'Connor, A.M., Reist, M., Sato, Y., **Wang, C.**, Winder, C.B. (2019). The efficacy of litter management strategies to prevent morbidity and mortality in broiler chickens: A systematic review and network meta-analysis. *Animal Health Research Reviews*, 20(2), 247-262. [DOI:10.1017/S1466252319000227](https://doi.org/10.1017/S1466252319000227).

160. Sargeant, J., Deb, B., Bergevin, M.D., Churchill, K., Dawkins, K., Dunn, J., ***Hu, D.**, Moody, C., O'Connor, A.M., O'Sullivan, T.L., Reist, M., **Wang, C.**, Wilhelm, B., Winder, C.B. (2019). Efficacy of bacterial vaccines to prevent respiratory disease in swine: A systematic review and network meta-analysis. *Animal Health Research Reviews*, 20(2), 274-290. DOI:10.1017/S1466252319000173.
159. Sargeant, J., Bergevin, M.D., Churchill, K., Dawkins, K., Deb, B., Dunn, J., ***Hu, D.**, Moody, C., O'Connor, A.M., O'Sullivan, T.L., Reist, M., **Wang, C.**, Wilhelm, B., Winder, C.B. (2019). A systematic review of the efficacy of antibiotics for the prevention of swine respiratory disease. *Animal Health Research Reviews*, 20(2), 291-304. DOI:10.1017/S1466252319000185.
158. Bries, A.E., **Wang, C.**, Agbemaflle, I. Wels, B, Reddy, M.B. (2019) Assessment of Acute Serum, Non-Transferrin Bound Iron and Gastrointestinal Symptoms with 3-Week Consumption with Iron-Enriched *Aspergillus Oryzae* Compared to Ferrous Sulfate, *Current Developments in Nutrition*, 3(12):nzz127. DOI:10.1093/cdn/nzz127.
157. Zhang, Y., O'Connor, A.M., **Wang, C.**, Dickson, J.S., Hurd, H.S., Wang, B. (2019) Interventions Targeting Deep Tissue Lymph Nodes May Not Effectively Reduce the Risk of Salmonellosis from Ground Pork Consumption: A Quantitative Microbial Risk Assessment. *Risk Analysis*, 39(10):2237-2258. DOI:10.1111/risa.13317.
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154. ***Sun, Y.**, **Wang, C.**, Meeker, W.Q., Morris, M., Zimmerman, J. (2019). A Latent Spatial Piecewise Exponential Model for Interval-Censored Disease Surveillance Data with Time-Varying Covariates and Misclassification. *Statistics and Its Interface*, 12(1):11-19. DOI:10.4310/SII.2019.v12.n1.a2.
153. Allenspach, K.A., Mochel, J.P., ***Du, Y.**, Priestnall, S.L., Moore, F., Slayter, M., Rodrigues, A., Ackermann, M., Krockenberger, M., Mansell, J.; WSAVA GI Standardization Working Group, Luckschander, N., **Wang, C.**, Suchodolski, J., Berghoff, N., Jergens, A.E. (2019) Correlating Gastrointestinal Histopathologic Changes to Clinical Disease Activity in Dogs With Idiopathic Inflammatory Bowel Disease. *Veterinary Pathology*, 56(3):435-443. DOI:10.1177/0300985818813090.
152. Poonsuk, K., Giménez-Lirola, L.G., Magtoto, R.L., ***Ji, J.**, Baum, D.H., Rademacher, C.J., Brown, J.T., Zhang, J., **Wang, C.**, Main, R.G., Zimmerman, J.J. (2018) The effect of chemical clarification of oral fluids on porcine epidemic diarrhea virus antibody responses. *Journal of Veterinary Diagnostic Investigation*, 30(6):937-941. DOI:10.1177/1040638718798672.
151. Weiser, A.C., Poonsuk, K., Bade, S.A., Gauger, P.C., Rotolo, M., Harmon, K., Gonzalez, W.M., **Wang, C.**, Main, R., Zimmerman, J.J. (2018) Effects of sample handling on the detection of porcine reproductive and respiratory syndrome virus in oral fluids by reverse-transcription real-time PCR. *Journal of Veterinary Diagnostic Investigation*, 30(6):807-812. DOI:10.1177/1040638718805534.

150. Almeida, M.N., Zimmerman, J.J., **Wang, C.**, Linhares, D.C.L. (2018) Assessment of abattoir based monitoring of PRRSV using oral fluids. *Preventive Veterinary Medicine*, 158:137-145. DOI:10.1016/j.prevetmed.2018.08.002.
149. Garraway, K., Johannes, C.M., Bryan, A., Peauroi, J., Rossi, G., ***Zhang, M., Wang, C.**, Allenspach, K., Jergens, A.E. (2018) Relationship of the mucosal microbiota to gastrointestinal inflammation and small cell intestinal lymphoma in cats. *Journal of Veterinary Internal Medicine*, 32(5):1692-1702. DOI:10.1111/jvim.15291.
148. Henao-Díaz, Y.A., Giménez-Lirola, L., Poonsuk, K., Cheng, T.Y., **Wang, C.**, ***Ji, J.**, Baum, D.H., Main, R.G., Zimmerman, J.J. (2018) Effect of chemical clarification of oral fluids on the detection of porcine reproductive and respiratory syndrome virus IgG. *Journal of Veterinary Diagnostic Investigation*, 30(5):671-677. DOI:10.1177/1040638718789220.
147. ***Goren, E.**, Liu, P., Wang, C., **Wang, C.** (2018) BinQuasi: a peak detection method for ChIP-sequencing data with biological replicates. *Bioinformatics*, 34(17):2909-2917. DOI:10.1093/bioinformatics/bty227.
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145. Kleinhenz, M.D., Van Engen, N.K., Smith, J.S., Gorden, P.J., ***Ji, J., Wang, C.**, Perkins, S.C.B., Coetzee, J.F. (2018) The impact of transdermal flunixin meglumine on biomarkers of pain in calves when administered at the time of surgical castration without local anesthesia. *Livestock Science*, 212:1-6. DOI:10.1016/j.livsci.2018.03.016.
144. Gorden, P.J., Burchard, M., Ydstie, J.A., Kleinhenz, M.D., Wulf, L.W., Rajewski, S.J., **Wang, C.**, Gehring, R., Mochel, J.P., Coetzee, J.F. (2018) Comparison of milk and plasma pharmacokinetics of meloxicam in postpartum versus mid-lactation Holstein cows. *Journal of Veterinary Pharmacology and Therapeutics*, 41(3):463-468. DOI:10.1111/jvp.12488.
143. Makielski, K.M., Brooks, M.B., **Wang, C.**, Cullen, J.N., O'Connor, A.M., LeVine, D.N. (2018) Development and implementation of a novel immune thrombocytopenia bleeding score for dogs. *Journal of Veterinary Internal Medicine*, 32(3):1041-1050. DOI:10.1111/jvim.15089.
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2. **Wang, C.**, Turnbull, B. W., Gröhn, Y. T., Nielsen, S. S. (2007). Nonparametric estimation of ROC curves based on Bayesian models when the true disease state is unknown. *Journal of Agricultural, Biological, and Environmental Statistics*, 12:128–146. [DOI:10.1198/108571107X178095](https://doi.org/10.1198/108571107X178095)
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MANUSCRIPTS SUBMITTED TO PEER-REVIEWED JOURNALS

1. ***Hu, D., Wang, C.**, O'Connor, A. (2021) Using information from network meta-analyses to optimize the power and sample allocation of a subsequent trial with a new treatment. In preparation.

MANUSCRIPTS IN PREPERATION

1. ***Du, Y., Wang, C.**, Zimmerman, J.J. (2021) Choosing cutoff values for correlated continuous diagnostic data: adjustment for confidence interval estimations of sensitivity and specificity.

2. *Ye, F., Wang, C., O'Connor, A. (2021) Using information from existing network meta-analyses to optimize a new two-arm trial. In preparation.
3. *Hu, D., Wang, C., O'Connor, A. (2021) Optimizing treatment allocation of a group-randomized trial with a new treatment using existing network meta-analyses. In preparation.
4. Mugabi, R., Silva, A.P., Rotolo, M.L., Krantz, S., Harms, P. McKeen, L., *Hu, D., Wang, C., Zimmerman, J.J., Clavijo, M.J. (2021) Evaluation of the effect of tracheal sample pooling on M. hyopneumoniae PCR detection. In preparation
5. Trevisan, G., *Morris, P., Culhane, M., Malladi, S., Wang, C., Zimmerman, J.J. (2021) Participatory active Surveillance For The Detection of A Transboundary Swine Pathogen- Exploration Of The Concept. In preparation
6. Massey, N., Shrestha, D., Bhat, S., Padhi, P., Wang, C., Karriker, L.A., Smith, J.L., Kanthasamy, A.G., Charavaryamath, C. (2021) Mitoapocynin Attenuates Organic Dust Exposure Induced Neuroinflammation and Sensory-motor Deficits in a Mouse Model: Relevance to the Role of Lung-Brain Axis in Pathogenesis of Chronic Neurological Diseases During Environmental Dust Exposure. *Frontiers in Cellular Neuroscience*. To be submitted.

PUBLISHED BOOK CHAPTERS

1. Liu, P., *Goren, E., *Morris, P., Walker, D., Wang, C. (2021) Statistical Methods for Feature Identification in Microbiome Studies. in *Statistical Analysis of Microbiome Data (Frontiers in Probability and the Statistical Sciences)*, ed. Somnath Datta, Subharup Guha.
2. Zimmerman, J., Gimenez-Lirola, L., Wang, C. (2021) Advanced techniques to monitor pig health and identify disease. in *Optimising pig herd health and production*, ed. Dominiek Maes, Joaquim Segalés.

RESEARCH GRANTS AND PROPOSALS

Awarded:

- ◆ National Pork Board (#22-028) 06/01/22-05/31/23
Jeffrey Zimmerman(PI), Giovanni Trevisan, Chong Wang, Gustavo De-Sousa-E-Silva, Rodger G Main
Participatory Regional Surveillance to establish regional FAD status within the U.S. and improve swine movement decisions
Total Award Amount: \$106,860.00
Role: CO-Investigator. Development of statistical methodologies, advising students.
- ◆ USDA-NIFA-AFRI (#20226801436668) 01/01/22-12/31/24
Daniel Linhares (PI), Edison Magalhaes, Derald Holtkamp, Chong Wang, Hridesh Rajan, Gustavo Machado, Gustavo De-Sousa-E-Silva, Jason Ross, Giovanni Trevisan
Integrating data streams for causal inference and forecasting application to foster precision swine health & production management.
Total Award Amount: \$998,162.00
Role: CO-Investigator. Development of statistical methodologies, comparing the forecasting models and developing causal inference models.

- ◆ Swine Health Information Center (#21-135) 12/15/21-12/14/22
Chong Wang (PI), Jeffrey Zimmerman
Development of environment sampling methods for disease freedom of the barn based on spatially balanced sampling
Total Award Amount: \$46,521.00
Role: Principal Investigator. Development of novel statistical methodologies for environment sampling of infectious disease in the barn, computationally intensive simulations, advising research assistant students, and dissemination of findings.
- ◆ Michigan State University (#581465) 07/01/21-12/31/22
Chong Wang (PI)
Understanding the design of randomized controlled designs in livestock production
Total Award Amount: \$31,350
Role: Principal Investigator. Development of novel statistical methodologies to design randomized controlled trials with existing network meta analyses (NMA) data.
- ◆ NIH-NINDS (Grant No: U01 NS117284-01A1) 07/01/21-06/30/26
Thimmasettappa Thippeswamy (PI), Chong Wang
Saracatinib and 1400W Counteract Nerve Agents-induced Long-term Neurotoxicity
Total Award Amount: \$ 3,748,154
Role: Co-PI. Design of experiments, sample size and power calculation, data analyses, and dissemination of findings
- ◆ NIH-NINDS (Grant No: 022970/147405) 07/01/20-06/30/23
Anumantha Kanthasamy (PI), Arthi Kanthasamy, Chong Wang, Gregory Phillips, Jonathan Mochel, Shankumar Mooyottu
Novel Re-engineered L-DOPA probiotic therapy for Parkinson's Disease
Total Award Amount: \$ 1,177,494
Role: Co-PI. Design of experiments, sample size and power calculation, data analyses, and dissemination of findings.
- ◆ USDA-NIFA-AFRI 09/01/21-08/31/25
Nick Seroo (PI)
TTAGGD: Transdisciplinary Training in Animal Genetics and Genomics, and Disease
Total Award Amount: \$262,500
Role: Collaborator. Advising and training of graduate students.
- ◆ USDA (Grant No: 2018-67030-28361) 07/01/18-10/31/21
Chong Wang (PI), Annette O'Connor
Solving the inadequacies of current approaches to analysis of antibiotic resistance data.
Total Award Amount: \$100,000
Role: Principal Investigator. Development of novel statistical methodologies for antibiotic resistance data, data analyses, computationally intensive simulations, advising research assistant students, and dissemination of findings.

- ◆ Swine Health Information Center (#20-127) 08/16/20-08/15/21
Chong Wang (PI), Jeffrey Zimmerman
Development of Spatially Balanced Sampling Draft Program for Disease Surveillance
Total Award Amount: \$25,000
Role: Principal Investigator. Development of novel statistical methodologies for animal disease surveillance, data analyses, computationally intensive simulations, advising research assistant students, and dissemination of findings.
- ◆ FDA (Grant ID: U01 FD007049-01). 09/01/20-08/31/21
Paul Morley (PI), Bryant T, O'Connor A, Wang C, Nair M, Morgan B, Szasz J, Lawrence T, Richeson T, Lucherker L, Weinheimer B
Evaluating duration of tylosin phosphate treatment in feedlot cattle for liver abscess prevention to ensure efficacy while addressing concerns about antimicrobial resistance
Total Award Amount: \$499,943
Role: Co-PI. Development of novel statistical methodologies to design a new clinical trial with existing network meta analyses (NMA) data, NMA data analyses, computationally intensive simulations, advising research assistant students, and dissemination of findings.
- ◆ National Pork Board (#19-067) 09/01/19-08/31/20
Jeff Zimmerman (PI), Luis Gimenez-Lirola, Locke Karriker, Rodger Main, Chong Wang, Justin T Brown
Oral fluid sample size for FAD detection at low prevalence in large commercial pigs
Total Award Amount: \$ 141,536
Role: Co-PI. Design of experiments, sample size and power calculation, data analyses, and dissemination of findings.
- ◆ Swine Health Information Center 01/01/19-12/01/20
Luis Gimenez-Lirola (PI), Phillip Gauger, Rodger Main, Chong Wang, Jeffrey Zimmerman
Detection of PRV Shedding by PCR: Nasal Swab vs Oral Fluid Samples
Total Award Amount: \$102,174
Role: Co-PI. Design of experiments, sample size and power calculation, data analyses.
- ◆ Central Plains Federal Statistical Research Data Center (CPRDC) 10/01/18-9/30/19
Chong Wang (PI), Zhengyuan Zhu, Duck-chul Lee, Peng Liu, Zhulin He
Statistical Causal Inference Analyses of the Effect of Physical Activity on Cardiovascular Disease and Diabetes
Total Award Amount: \$ 10,000
Role: Principal Investigator. Novel application of statistical causal inference methodologies to kinesiology data, data collection and analyses, computationally intensive simulations.
- ◆ Swine Health Information Center 09/01/18-08/31/19
Jeff Zimmerman (PI), Luis Gimenez-Lirola, Roger Main, Chong Wang, Korakrit Poonsuk
Validation of a FMDV 3ABC indirect ELISA (iELISA) for swine oral fluid specimens
Total Award Amount: \$112,001
Role: Co-PI. Design of experiments, sample size and power calculation, data analyses, and dissemination of findings.

- ◆ Swine Health Information Center (#18-198) 10/01/18-9/30/19
Jeff Zimmerman (PI), Chong Wang, Rodger Main
Development of Regional Surveillance Systems for Emerging and FADs of Swine
Total Award Amount: \$24,702
Role: Co-PI. Novel application of spatially balanced sampling methodologies to regional surveillance of swine disease, data collection and analyses, computationally intensive simulations, advising research assistant students, and dissemination of findings.
- ◆ National Pork Board Checkoff research funds (#17-174) 10/01/17-9/30/18
Chong Wang (PI), Jeffrey Zimmerman
What is the best oral fluid sampling strategy for PRRSV detection? A spatiotemporal approach.
Total Award Amount: \$ 26,062
Role: Principal Investigator. Development of novel statistical methodologies for sampling animal diseases, data collection and analyses, computationally intensive simulations, advising research assistant students, and dissemination of findings.
- ◆ Swine Health Information Center 10/01/17-9/30/18
Luis G Gimenez-Lirola (PI), Jeffrey Zimmerman, David Baum, Pablo Pineyro, Rodger Main, Chong Wang
Development of PRV oral fluid/fecal antibody ELISAs (screening and DIVA)
Total Award Amount: \$ 72,437
Role: Co-PI. Design of experiments, sample size and power calculation, data analyses, and dissemination of findings.
- ◆ National Pork Board Checkoff research funds 10/01/11-9/30/13
Chong Wang (PI), Jeffrey Zimmerman, Jae-Kwang Kim, Alejandro Ramirez, Derald Holtkamp
Design and analysis of PRRSV surveillance: temporal and spatial sampling, mapping, monitoring and automated rapid detection of outbreak
Role: Principal Investigator
Total Award Amount: \$ 24,378
- ◆ FDA 9/1/2013-8/31/2018
Wilson Rumbelha (PI), Steve Ensley, Paula Imerman, Chong Wang
ISU Vet-LIRN collaborative validation of testing methods on animal diagnostic specimens
Role: Co-PI
Total Award Amount: \$ 495,000
- ◆ USDA-NIFA-AFRI 03/01/12-12/31/14
Jeffrey Zimmerman (PI)
Safeguarding the viability of US swine producers through a comprehensive and integrated swine health surveillance system. Part 1. Optimization of diagnostic assays for oral fluid specimens
Role: Co-PI
Total Award Amount: \$ 250,000

- ◆ NIH U19 AI-091031 07/01/10-6/30/15
Michael W. Cho (PI)
Enhancing B cell immunity against HIV-1 using novel vaccine delivery platforms
Role: Statistician
Total Award Amount: \$ 6,859,390
- ◆ National Pork Board Checkoff research funds 01/01/14-06/30/14
Luis Gabriel Gimenez-Lirola (PI), Kyoung-Jin Yoon, John K Johnson, Darin Michael Madson,
Rodger Gary Main, Chong Wang, Jianqiang Zhang, Jeffrey J Zimmerman
Defining PEDV maternal humoral immunity and correlates of neonatal protection
Role: Co-PI
Total Award Amount: \$ 107,711
- ◆ National Pork Board Checkoff research funds 12/01/13-11/30/15
Jeffrey Zimmerman (PI), Kyoung-Jin Yoon, Chong Wang
Development of on-farm PRRSV surveillance guidelines for the modern pork industry
Role: Co-PI
Total Award Amount: \$ 199,918
- ◆ Innovative Swine Industry Enhancement Grant Program (ISIEGP), Iowa Attorney General's
Office in collaboration with Smithfield Foods Inc. 09/01/13-08/31/14
Jeffrey Zimmerman (PI), Chong Wang, Kyoung-Jin Yoon
Developing sample size and frequency guidelines for PRRSV surveillance using pen-based
oral fluid samples
Role: Co-PI
Total Award Amount: \$ 71,027
- ◆ Innovative Swine Industry Enhancement Grant Program, Iowa Attorney General's Office
Jeffrey Zimmerman (PI) 05/16/11-05/15/12
Sample size recommendations for the detection of porcine reproductive and respiratory
syndrome virus (PRRSV) infection using pen-based oral fluid samples.
Role: Co-PI
Total Award Amount: \$ 50,538
- ◆ Zurex Pharma, Inc. (2013) 01/01/13-12/31/14
Jennifer Schleining (PI), Paul Plummer, Chong Wang
Antimicrobial Efficacy of a Solution Containing Sodium Citrate and Isopropyl Alcohol as a
Preoperative Preparation in Cattle Under Field Conditions.
Role: Co-PI
Total Award Amount: \$ 36,000
- ◆ American Kennel Club 01/15/12-01/15/14
Albert E Jergens (PI)
Probiotic VSL# 3 reduces enteritis in dogs with inflammatory bowel disease
Role: Statistician
Total Award Amount: \$ 97,416

- ◆ ISU Presidential Initiative for Interdisciplinary Research (PIIR) 07/01/13-06/30/16
Balaji Narasimhan (PI), Michael Wannemuehler, Susan Carpenter
Systems Design of Nanovaccines
Role: Co-PI
Total Award Amount: \$ 1,500,000

- ◆ ISU Presidential Initiative for Interdisciplinary Research (PIIR) 07/01/13-06/30/16
Michael Cho (PI), Jim Roth, Kyoungjin Yoon
Integrated, interdisciplinary vaccine research against antigenically diverse viruses
Role: Co-PI
Total Award Amount: \$ 1,245,000

- ◆ ISU Women’s and Diversity Grants Program 07/01/14-06/30/15
Wilson Rumbelha (PI), Catherine Logue, Chong Wang
College of Veterinary Medicine diversity climate survey
Role: Co-Principal Investigator
Total Award Amount: \$ 5,000

- ◆ ISU VCS Competitive Grants David Wong (PI) 01/01/11-12/31/11
Use of Intravenous Polymyxin B to Ameliorate Endotoxemia in Neonatal Foals
Role: Statistician
Total Award Amount: \$ 5,320

- ◆ ISU VCS Competitive Grants Bruce W Christensen(PI) 01/01/11-12/31/11
Somali wild ass (*Equus africanus somaliensis*) chilled semen transport for frozen
cryopreservation
Role: Co-Investigator
Total Award Amount: \$ 4,900

- ◆ Iowa State University CVM Health Livestock Initiative (HLI) 701-05-04-00-0036
Patrick J. Gorden (PI) 07/01/09-06/30/11
Development of a Metagenomics Tool Box and Application of Metagenomics to Address
culture Negative Clinical Mastitis Samples
Role: Co-Investigator
Total Award Amount: \$ 30,000

Proposals Pending:

- ◆ USDA-APHIS 01/01/22-12/31/23
Jeff Zimmerman (PI), Chong Wang, Gustavo, De-Sousa-E-Silva
Participatory Regional Surveillance to track regional FAD status and improve swine movement
decisions
Role: Co-PI
Total Award Amount: \$ 216,740

- ◆ Burroughs Wellcome Funds (IRSA) 09/01/21-08/31/26
Annette O’Connor (PI), Chong Wang
Leveraging research synthesis tools to enable regulator decision making
Role: Co-PI
Total Award Amount: \$ 164,067

- ◆ NIH-NIA 09/01/21-08/31/26
Anumantha Kanthasamy (PI), Arthi Kanthasamy, Vellareddy Anantharam, Gregory Phillips, Karin, Allenspach-Jorn, Jonathan Mochel, Agnes Bourgois-Mochel, Chong Wang, Shankumar Mooyottu
Novel re-engineered microbiome-based biologic therapy to treat cognitive and behavioral symptoms of Alzheimer's disease and related dementias
Role: Co-PI
Total Award Amount: \$ 7,513,489
- ◆ USDA-NIFA 05/01/22-04/30/25
Jianqiang Zhang (PI), Derald Holtkamp, Chong Wang, Michael Rahe, Jeffery Zimmerman, Crystal Loving
Informing vaccine selection: immunogenicity and protective efficacy of PRRSV vaccines
Role: Co-PI
Total Award Amount: \$ 647,892

Proposals Not Funded:

- ◆ NIH 07/01/20-06/30/22
Wilson Rumbelha (PI), Jodi D Smith, Chong Wang
Mechanisms of dual Midazolam-Cobinamide therapy for acute hydrogen sulfide-induced morbidity and mortality
Role: Co-Investigator
Total Award Amount: \$ 406,849
- ◆ NIH 09/01/19-08/30/24
Kanthasamy, Anumantha G (PI), Arthi Kanthasamy, Wang, Chong, Auriel A Willette
Evaluation of Rationale Based Progression Biomarkers for Parkinson's Disease Dementia
Role: Co-Investigator
Total Award Amount: \$ 3,828,906
- ◆ DOD 9/1/2019-2/28/2021
Kanthasamy, Anumantha G (PI), Mochel, Jonathan P, Phillips, Gregory J, Wang, Chong, Kanthasamy, Arthi
Reengineered L-DOPA Microbiome Therapy for Depression
Role: Co-Investigator
Total Award Amount: \$ 534,859
- ◆ NIH 07/01/19-06/30/24
Thippeswamy, Thimmasettapp (PI), Wang, Chong
Saracatinib and 1400W counteract Nerve Agent-induced Long-term Neurotoxicity
Role: Co-Investigator
Total Award Amount: \$ 3,172,655
- ◆ NIH 04/01/19-03/31/24
Wilson Rumbelha (PI), Arthi Kanthasamy, Smith, Jodi D, Chong Wang
Deciphering mechanisms of acute hydrogen sulfide-induced neurotoxicity
Role: Co-Investigator
Total Award Amount: \$ 1,851,362

- ◆ NIH 07/01/17-06/30/22
Wilson Rumbelha (PI), Arthi Kanthasamy, Anumantha G Kanthasamy, Chong Wang, Paula M Imerman
Optimizing cobinamide-midazolam combination therapy for treatment of hydrogen sulfide induced neurotoxicity and neurodegeneration
Role: Co-Investigator
Total Award Amount: \$ 3,409,732
- ◆ NIH 03/01/17-2/28/22
Michael Cho (PI), David Verhoeven, Chong Wang, Young-Jin Lee, Chenxu Yu
Eliciting protective antibody responses against HIV-1 gp41 MPER
Role: Co-Investigator
Total Award Amount: \$ 10,529,573
- ◆ FOUNDATION FOR MEAT AND POULTRY 02/01/17-01/31/18
Annette M O'Connor (PI), Chong Wang, Catherine Logue, James S Dickson
Assessing the impact of pathogen reduction treatments in plant on Salmonella serotype I 4,[5], 12:i:-
Role: Co-Investigator
Total Award Amount: \$ 136,809
- ◆ NATIONAL PORK BOARD 05/01/17-04/30/18
Chong Wang (PI), Annette M O'Connor
Assessing association in antimicrobial resistance between swine and human: A Bayesian latent class hierarchical model with arbitrary censoring
Role: Principal -Investigator
Total Award Amount: \$ 21,557
- ◆ Boehringer Ingelheim Vetmedica, Inc. 05/16/17-05/15/18
Chong Wang (PI), Jeff Zimmerman
What is the best oral fluid sampling strategy for PRRSV detection? An analysis of spatiotemporal field data
Role: Principal -Investigator
Total Award Amount: \$ 34,714
- ◆ AMERICAN ASSOCIATION OF SWINE VETERINARIANS 06/01/17-05/31/18
Jianqiang Zhang (PI), Phillip Gauger, Karen M Harmon, Rodger Gary Main, Chong Wang
Comparison of PRRSV virus isolation in different cell lines towards improving success of isolating PRRSV from clinical samples
Role: Co-Investigator
Total Award Amount: \$ 30,000
- ◆ SWINE HEALTH INFORMATION CENTER 09/01/17-08/31/18
Jeff Zimmerman (PI), Chong Wang, Rodger Gary Main
An exploration of surveillance based on spatial sampling using ISU VDL submission.
Role: Principal -Investigator
Total Award Amount: \$ 69,792

- ◆ USDA-NIFA-AFRI 01/01/15-12/31/19
James Roth (PI), Rodger Main, Jeffrey Zimmerman, Max Morris, Chong Wang
Implementation of the Secure Pork Supply Business Continuity Plan to Improve
Prevention, Early Detection, Rapid Diagnosis, Containment, Mitigation and Recovery
from Four Foreign Animal Diseases
Role: Co-Investigator
Total Award Amount: \$ 7,476,936.00

- ◆ Iowa Pork Producers Association 01/01/13-12/31/13
Phil Gauger (PI)
Detection and characterization of Influenza A virus endemic circulation in neonatal nursery
pigs in a farm using routine influenza vaccination
Role: Co-Investigator
Total Award Amount: \$ 70,000

- ◆ USDA Johann Coetzee (PI) 12/01/12-11/30/16
Pain mitigation in organic livestock production: identifying needs and evaluating interventions
that assist producers in enhancing animal welfare
Role: Co-Investigator
Total Award Amount: \$ 1,270,475

- ◆ Morris Animal Foundation (MAF) Grant Annette M O'Connor (PI) 07/01/12-06/30/13
A systematic review and meta-analysis of the comparative efficacy of
interventions for the reduction of fleas populations in dogs
Role: Co-Investigator
Total Award Amount: \$ 36,765

- ◆ National Science Foundation Robert W Thornburg (PI) 10/01/12-09/30/15
GEPR: Genomics and biochemistry of plant secretions among the core eudicots
Role: Co- Principal Investigator
Total Award Amount: \$ 2,457,192

- ◆ Boehringer Ingelheim Vetmedica Inc. Grant Tanja Opriessnig (PI) 03/16/11-03/15/12
Best Practices For Minimizing False Positive PRRSV Serology Test Results
Role: Co- Investigator
Total Award Amount: \$ 25,000

- ◆ NSF IOS Plant Genome Research Project 07/01/11-06/30/15
Robert W Thornburg (PI)
Genomics and biochemistry of plant secretions among the core eudicots
Role: Co- Principal Investigator
Total Award Amount: \$ 3,823,222

- ◆ NSF IOS Organismal environ interactions 07/01/11-06/30/14
Robert W Thornburg (PI)
Functional Characterization of swarms of plant peptides and the proteases that spawn them
Role: Co- Principal Investigator
Total Award Amount: \$ 1,545,303

- ◆ ISU CVM Seed Grants Program 07/01/11-06/30/12
Chong Wang (PI)
Sequential Design and Analysis of Animal Infectious Disease Surveillance
Role: Principal Investigator
Total Award Amount: \$ 20,000
- ◆ Morris Animal Foundation (MAF) Grant Bruce W Christensen(PI) 01/01/11-12/31/12
Somali wild ass (*Equus africanus somaliensis*) chilled semen transport for cryopreservation
Role: Co-Investigator
Total Award Amount: \$ 96,331
- ◆ DOD 07/01/11-06/30/14
Albert Jergens (PI)
Rules of Engagement: Bacterial Mucosal Association Promotes Inflammation and Risk of IBD
Role: Co-Investigator
Total Award Amount: \$ 1,025,394
- ◆ NIH R01 Albert Jergens (PI)
Imbalances in gut microbiota define onset and severity of colitis
Role: Co-Investigator
Total Award Amount: \$ 2,548,516
- ◆ PFIZER ANIMAL HEALTH Annette O'Connor (PI)
An equivalence study for two commercially available PCVII vaccines
Role: Co-Investigator
Total Award Amount: \$ 109,754
- ◆ USDA AFRI 1/1/11-12/31/16
Nancy Cornick (PI)
Addressing mechanisms of *Mycoplasma hyopneumoniae* pathogenesis through functional genomics
Role: Co-Investigator
Total Award Amount: \$ 2,478,227
- ◆ USDA AFRI 06/01/11-05/31/14
Jeffrey Zimmerman (PI)
New Biology for the 21st Century: Defining New Standards of Animal Welfare and Health in Commercial Swine Populations
Role: Co-Investigator
Total Award Amount: \$ 699,517
- ◆ USDA AFRI Chris Minion (PI)
Addressing mechanisms of *Mycoplasma hyopneumoniae* pathogenesis through functional genomics
Role: Co-Investigator
Total Award Amount: \$ 817,156
- ◆ NIH R15 Tim Frana (PI)
Methicillin-resistant staphylococci found in students visiting animal facilities
Role: Statistician

- ◆ Boehringer Ingelheim Vetmedica Inc. Bovine Infectious Disease Research Initiative Program
Annette O'Connor (PI)
Understanding the Role of *Moraxella bovoculi* in the Epidemiology of Infectious Bovine Keratoconjunctivitis (IBK)
Role: Co-Investigator

INVITED PRESENTATIONS

- ◆ Active regional surveillance for early detection of exotic/emerging pathogens of swine: A comparison of statistical methods for farm selection. The 3rd Annual Veterinary Diagnostics Conference. Zhejiang, China, June, 2021.
- ◆ Application of spatially balanced sampling to active regional surveillance of U.S. commercial swine Farms. The 3rd Annual Veterinary Diagnostics Conference. Zhejiang, China, June, 2021.
- ◆ Set testing methods based on zero-inflated models for microbiome data. 13th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2020), December, 2020.
- ◆ Network Meta-analysis for Veterinarians, Department of Population Medicine, Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada, December, 2019
- ◆ Modeling Regional PEDV Spread Among Swine Farms in Iowa Using a Bayesian Spatio-temporal Model with Missing Data. USDA, Fort Collins, August, 2019
- ◆ Spatio-temporal approaches to surveillance sampling for disease detection. 99th Annual Conference of Research Workers in Animal Diseases. Chicago, Illinois. Dec. 2018.
Keynote Speech.
- ◆ Sample Size and Allocation for Animal Disease Surveillance, 2015 ICSA CHINA STATISTICS CONFERENCE, Shanghai, China, July, 2015
- ◆ A Semi-parametric Bayesian Approach for Differential Gene Expression Analysis with RNA-seq Data, Computational and Applied Math Seminar, Department of Mathematics, Iowa State University, Ames, IA, Sep, 2014
- ◆ Zero-Inflated Poisson Model for Insertion Tolerance Analysis of Genes Based on Tn-seq Data. Symposium: Innovations in Design, Analysis, and Dissemination: Frontiers in Biostatistical Methods. Overland Park, Kansas, April, 2014.
- ◆ Surveillance samples: Where? How many? How often? AASV 2013 Annual Meeting, San Diego, CA, USA, March, 2013
- ◆ Design of repeated sampling for disease detection in surveillance of PRRSv, 2013 ICSA/ISBS Joint Statistics Conference, Bethesda, MD, USA, June, 2013
- ◆ Bayesian Analysis of Longitudinal Disease Diagnostic Data without a Perfect Reference Test, Animal Breeding and Genetics Seminar Series, Iowa State University, Ames, IA, March, 2012
- ◆ Design and analysis of PRRSv surveillance in swine, ICSA 2012 Applied Statistics Symposium, Boston, MA, July 26, 2012

- ◆ Method of Moments Estimation for the Proportion of the True Null Hypotheses in Multiple Testing. Iowa State University 2009 Conference in Statistics. Ames, IA. June 2009.
- ◆ ROC Analysis for Longitudinal Disease Diagnostic Data Without a Gold Standard Test
University of Kentucky, KY, 2007
University of Pittsburgh, PA, 2007
University of Arizona, AZ, 2007
University of Missouri at Kansas City, MO, 2007
New Jersey Institute of Technology, NJ, 2007
California State University, Long Beach, CA, 2007
Georgia Southern University, GA, 2007
- ◆ Estimation of ROC Curves when There Is No Perfect Reference Test
Brown University, RI, 2006
University of Missouri at Columbia, MO, 2006

OTHER PRESENTATIONS/ABSTRACTS/PROCEEDINGS

124. **Wang, C., *Zhang, M., O'Connor A.** A Bayesian latent class mixture model for correlation analysis in antimicrobial resistance across populations, NIAMRRE (National Institute of Antimicrobial Resistance Research and Education) Annual Conference, 2021.
123. ***Goren, E., Wang, C., Liu, P.,** Feature Selection for Microbiome Studies in the Presence of Confounding Using Standardization. Joint Statistical Meetings, 2021. Abstract #316635.
122. ***Hu, D.,** Cheng, T.-Y., ***Morris, P.,** Zimmerman, J., **Wang, C.** October 2020. Active regional surveillance for early detection of exotic/emerging pathogens of swine: A comparison of statistical methods for farm selection. American Association of Veterinary Laboratory Diagnosticians 2020 annual meeting. **Trainee Travel Awards**
121. ***Zhang, M., Wang, C., O'Connor A.,** Bayesian latent class mixture model with censoring for correlation in antimicrobial resistance across populations. Conference of Research Workers in Animal Diseases (CRWAD), 2020. **Best Student Paper Award.**
120. ***Hu, D., O'Connor, A., Wang, C., Morley, P.S.** Leveraging evidence from meta-analyses to determine the sample size of subsequent trials, Conference of Research Workers in Animal Diseases (CRWAD), 2020.
119. ***Ye, F., O'Connor, A., Wang, C.** Assessing randomized controlled trial designs and statistical analyses for the comparative efficacy of treatments, Conference of Research Workers in Animal Diseases (CRWAD), 2020.
118. ***Zhang, M., Wang, C., O'Connor A.,** A Hierarchical Bayesian Latent Class Mixture Model with Censorship for Detection of Linear Temporal Changes in Antibiotic Resistance. Joint Statistical Meetings, 2020.
117. **Wang, C.,** A spatio-temporal model for disease spread at regional level. Senior oral presentation, GeoVet 2019, University of California, Davis, October, 2019.
116. ***Ji, J., Wang, C.,** He, Z., Hay, K., Barnes, T., O'Connor, A. A Comparison of Statistical Causal Inference Methods for Animal Health Applications. Join Statistical Meetings, Colorado, 2019
115. Mehling, S., Zimmerman, J. J., Baum, D. H., Rademacher, C. J., Gimenez-Lirola, L. G., **Wang, C., ... Stika, R.** (2019). Wean-to-finish pig death patterns associated with stocking

- density and profitability differences. In Pig Welfare Symposium 2019. Minneapolis, MN. poster #7.
114. Zimmerman, J. J., Arruda, B. L., Baum, D. H., Burrough, E. R., Derscheid, R. J., Gauger, P. C., ... Zhang, J. (2019). NC-229 multistate Committee: Iowa State University Annual Report (2018-2019). In Proceedings of the North American PRRS Symposium (p. 84).
 113. Zimmerman, J. J., Baum, D. H., Pineyro-Pineiro, P. E., **Wang, C.**, Main, R. G., Gimenez-Lirola, L. G., ... Poonsuk, K. (2019). Detection of pseudorabies virus antibody in serum and oral fluid specimens using a whole virus indirect IgG ELISA. In Proc 100th Annual Conference of Research Workers in Animal Diseases. Chicago, Illinois. abstr #45
 112. Mehling, S., Zimmerman, J. J., Baum, D. H., Rademacher, C. J., Gimenez-Lirola, L. G., **Wang, C.**, ... Stika, R. (2019). Wean-to-finish pig death patterns associated with stocking density and profitability differences. In Pig Welfare Symposium 2019. Minneapolis, MN. poster #7.
 111. Zimmerman, J. J., Baum, D. H., Pineyro-Pineiro, P. E., **Wang, C.**, Main, R. G., Gimenez-Lirola, L. G., ... Poonsuk, K. (2019). Detection of pseudorabies virus antibody in serum and oral fluid specimens using a whole virus indirect IgG ELISA. In Proc 100th Annual Conference of Research Workers in Animal Diseases. Chicago, Illinois. abstr #45
 110. Zimmerman, J. J., Rademacher, C. J., Gimenez-Lirola, L. G., **Wang, C.**, Holtkamp, D. J., Main, R. G., ... Stika, R. (2019). Detection of pig death patterns during the wean-to-finish period, differences in profitability, and association to management practices and presence of endemic pathogens. In Proc 50th Ann Meet Am Assoc Swine Veterinarians. Orlando, Florida. pp. 281-282
 109. Zimmerman, J. J., Arruda, B. L., Baum, D. H., Burrough, E. R., Derscheid, R. J., Gauger, P. C., ... Zhang, J. (2019). NC-229 multistate Committee: Iowa State University Annual Report (2018-2019). In 2019 Proc North American PRRS Symposium. (p. 84). p. 84
 108. Zimmerman, J. J., Rademacher, C. J., Gimenez-Lirola, L. G., **Wang, C.**, Holtkamp, D. J., Main, R. G., ... Stika, R. (2019). Detection of pig death patterns during the wean-to-finish period, differences in profitability, and association to management practices and presence of endemic pathogens. In Proc 50th Ann Meet Am Assoc Swine Veterinarians. (pp. 281–282). pp. 281-282
 107. Zimmerman, J. J., Rademacher, C. J., Gimenez-Lirola, L. G., **Wang, C.**, Holtkamp, D. J., Main, R. G., ... Stika, R. (2019). Detection of pig death patterns during the wean-to-finish period, differences in profitability, and association to management practices and presence of endemic pathogens. In 50th Ann Meet Am Assoc Swine Veterinarians. Orlando, Florida. pp. 281-282
 106. Zimmerman, J. J., & **Wang, C.** (2019). A spatio-temporal model for disease spread at the regional level. In Proc Novel Spatio-Temporal Approaches in the Era of Big Data. University of California, Davis, California. doi: 10.3389/conf.fvets.2019.05.00040.
 105. Zimmerman, J. J., Gimenez-Lirola, L. G., **Wang, C.** (2019). Diagnostic assay development and applications to infectious disease surveillance. In Proc 19th International Symposium of the World Association of Veterinary Laboratory Diagnosticians and OIE Seminar. Chiang Mai, Thailand. pp. 56-57
 104. Zimmerman, J. J., Baum, D. H., **Wang, C.**, Gimenez-Lirola, L. G., Rademacher, C. J., Holtkamp, D. J., ... Schmaling, E. (n.d.). Measuring the respiratory pathogen burden in

- growing pigs to estimate the impact of disease. In Proc 11th European Symposium of Porcine Health Management. Utrecht, the Netherlands. Abstr HHM-OP-04
103. Linhares, D. C. L., Rademacher, C. J., Zimmerman, J. J., Gimenez-Lirola, L. G., **Wang, C.**, Ramirez, A., ... Goodell, C. (2019). Wean-to-Finish Pig Death Patterns Associated with Stocking Density and Profitability Differences. November 13-15, 2019 Poster 7
 102. Cheng, T., Baum, D. H., Buckley, A., van Geelen, A., Lager, K., Henao-Diaz, A., ... Gimenez-Lirola, L. G. (2019). Detection of pseudorabies virus antibody in serum and oral fluid specimens using a whole virus indirect IgG ELISA. In Proc. 100th Conference of Research Workers in Animal Diseases (CRWAD 2019). (p. Abstract #45).
 101. Zimmerman, J. J., Arruda, B. L., Baum, D. H., Burrough, E. R., Derscheid, R. J., Gauger, P. C., ... Zhang, J. (2019). NC-229 multistate Committee: Iowa State University Annual Report (2018-2019). In Proceedings of the North American PRRS Symposium (p. 84).
 100. Zimmerman, J. J., Arruda, B. L., Baum, D. H., Burrough, E. R., Derscheid, R. J., Gauger, P. C., ... Zhang, J. (2019). NC-229 multistate Committee: Iowa State University Annual Report (2018-2019). In Proceedings of the North American PRRS Symposium (p. 84).
 99. Zimmerman, J. J., Baum, D. H., **Wang, C.**, Gimenez-Lirola, L. G., Rademacher, C. J., Holtkamp, D. J., ... Schmaling, E. (2019). Measuring the respiratory pathogen burden in growing pigs to estimate the impact of disease. In Proc 11th European Symposium of Porcine Health Management. Utrecht, the Netherlands. Abstr HHM-OP-04
 98. Zimmerman, J. J., Baum, D. H., Rademacher, C. J., Gimenez-Lirola, L. G., **Wang, C.**, Ramirez, A., ... Stika, R. (2019). Wean-to-finish pig death patterns associated with stocking density and profitability differences. In Pig Welfare Symposium 2019. Minneapolis, MN. poster #7.
 97. Zimmerman, J. J., Arruda, B. L., Baum, D. H., Burrough, E. R., Derscheid, R. J., Gauger, P. C., ... Zhang, J. (2019). NC-229 multistate Committee: Iowa State University Annual Report (2018-2019). In 2019 Proc North American PRRS Symposium. (p. 84). Chicago, Illinois. p. 84
 96. Zimmerman, J. J., Arruda, B. L., Baum, D. H., Burrough, E. R., Derscheid, R. J., Gauger, P. C., ... Zhang, J. (2019). NC-229 multistate Committee: Iowa State University Annual Report (2018-2019). In 2019 Proc North American PRRS Symposium. (p. 84). Chicago, Illinois. p. 84
 95. Zimmerman, J. J., Rademacher, C. J., Gimenez-Lirola, L. G., **Wang, C.**, Holtkamp, D. J., Main, R. G., ... Stika, R. (2019). Detection of pig death patterns during the wean-to-finish period, differences in profitability, and association to management practices and presence of endemic pathogens. In 50th Ann Meet Am Assoc Swine Veterinarians. (pp. 281–282). pp. 281-282
 94. Zimmerman, J. J., Rademacher, C. J., Gimenez-Lirola, L. G., **Wang, C.**, Holtkamp, D. J., Main, R. G., ... Stika, R. (2019). Detection of pig death patterns during the wean-to-finish period, differences in profitability, and association to management practices and presence of endemic pathogens. In 50th Ann Meet Am Assoc Swine Veterinarians. Orlando, Florida. pp. 281-282
 93. Zimmerman, J. J., **Wang, C.**, Main, R. G., & Rotolo, M. (2019). Application of spatially balanced sampling to regional surveillance. In 50th Ann Meet Am Assoc Swine Veterinarians. Orlando, Florida. p. 321

92. Zimmerman, J. J., Arruda, B. L., Baum, D. H., Burrough, E. R., Derscheid, R. J., Gauger, P. C., ... Zhang, J. (2019). NC-229 multistate Committee: Iowa State University Annual Report (2018-2019). In Proc North American PRRS Symposium. Chicago, Illinois. p. 84
91. Yim-Im, W., Huang, H., Park, J., **Wang, C.**, Calzada, G., Gauger, P. C., ... Zhang, J. (2019). Comparison of different cell lines for improving PRRSV virus isolation from clinical samples. In Proc 50th Annual Meeting American Association of Swine Veterinarians (pp. 37–39).
90. Holtkamp, D. J., Baum, D. H., **Wang, C.**, Zimmerman, J. J., Gimenez-Lirola, L. G., Rademacher, C. J., & Stika, R. (2019). Measuring the respiratory pathogen burden in growing pigs to estimate the impact of disease. In 11th European Symposium of Porcine Health Management (p. 66).
89. Yim-Im, W., Huang, H., Park, J., **Wang, C.**, Calzada, G., Gauger, P. C., ... Zhang, J. (2019). Comparison of different cell lines for improving PRRSV virus isolation from clinical samples. In Comparison of different cell lines for improving PRRSV virus isolation from clinical samples (pp. 37–39).
88. Holtkamp, D. J., Baum, D. H., **Wang, C.**, Zimmerman, J. J., Gimenez-Lirola, L. G., Rademacher, C. J., & Stika, R. (2019). Measuring the respiratory pathogen burden in growing pigs to estimate the impact of disease. (p. 132).
87. Rotolo M, **Wang C**, Sun Y, Zimmerman J. March 2018. How many samples? Oral fluid vs serum. Proc Monitoring and Surveillance 2.0 Seminar, 49th Ann Meet Am Assoc Swine Veterinarians. San Diego, California, pp. 21-23.
86. Mehling, S., Maurer, J., Kluber, E., Stika, R., Rademacher, C., Zimmerman, J., Gimenez-Lirola, L., **Wang, C.**, Holtkamp, D., Main, R., Goodell, C., Baum, D. Dec 2018. Mortality patterns in a wean-to-finish portion of a commercial swine production system. Proc 99th Ann Meet Conference of Research Workers in Animal Diseases. Chicago, Illinois. Poster#201
85. Poonsuk K, Giménez-Lirola L, Magtoto R, Baum D, Rademacher C, Brown J, Ji J, Zhang JQ, **Wang C**, Main R, Zimmerman J. The effect of chemical clarification of oral fluids on PEDV isotype-specific (IgG, IgA) ELISA responses. 15th ISVEE. Chiang Mai, Thailand.
84. Henao-Diaz YA, Poonsuk K, Giménez-Lirola L, Cheng TY, Baum D, Rademacher C, Brown J, Ji J, **Wang C**, Zhang JQ, Zimmerman J. July 2018. Clarificación química de fluidos orales no afecta la detección de anticuerpos contra PEDV o PRRSV. Programa, LII congreso nacional de la Asociación Mexicana de Veterinarios Especialistas en Cerdos AMVEC. Mérida, Yucatán, México. Pag. 7.
83. Rotolo M, **Wang C**, Haddad M, Sun Y, Hoogland M, Main R, Zimmerman J. May 2018. Spatial autocorrelation and what it means for swine surveillance. Proc 10th European Symposium of Porcine Health Management. Barcelona, Spain, p. 318.
82. ***Yuan, C.**, O'Connor, A., **Wang, C.** Bayesian Latent Hierarchical model for detecting MIC creep. Conference of Research Workers in Animal Diseases (CRWAD), 2017. Abstract # 9.
81. Rotolo, M., **Wang, C.**, Haddad, M., Sun, Y., Hoogland, M. Main, R., Zimmerman, J. Surveillance... is “30” still the right answer? Conference of Research Workers in Animal Diseases (CRWAD), 2017. Abstract # 95.
80. Poonsuk, K., Gimenez-Lirola, L., Magtoto, R., Baum, D., Rademacher, C., Brown, J., Ji, J., Zhang, J., **Wang, C.**, Main, R., Zimmerman, J. Oral fluid specimens can be clarified without

- affecting porcine epidemic diarrhea virus (PEDV) isotype-specific (IgG, IgA) ELISA responses. Conference of Research Workers in Animal Diseases (CRWAD), 2017. Abstract # 233.
79. Rotolo M, Ji J, Giménez-Lirola L, Magtoto R, **Wang C**, Baum D, Hoogland M, Main R, Zimmerman J. Feb 2017. Proof of concept: PRRSV IgM/IgA ELISA detects infection in the face of circulating maternal IgG antibody. Proc 48th Ann Meet Am Assoc Swine Veterinarians. Denver, Colorado, p. 31.
 78. Rotolo M, Giménez-Lirola LG, **Wang C**, Zimmerman J. 2016. Monitorización y vigilancia del virus del PRRS con muestras de fluidos orales: Cómo y por qué. Suis 133:20-25.
 77. Rotolo M, Sun Y, **Wang C**, Haddad M, Bade S, Baum D, Gauger P, Harmon K, Main R, Zimmerman J. November 2016. PRRSV surveillance in growing pig populations. Proceedings 2016 ISU James D McKean Swine Disease Conference, Iowa State University. Ames, Iowa, pp. 94.
 76. Rotolo, M., Haddad, M., Sun, Y., Giménez-Lirola, L.G., Bade, S., **Wang, C.**, Baum, D., Gauger, P., Hoogland, M., Main, R., Zimmerman, J. Oct 2016. Spatial autocorrelation and implications for oral fluid-based PRRSV surveillance. Proc 58th Ann Meet American Association of Veterinary Laboratory Diagnosticians. Greensboro, North Carolina. p. 60.
 75. Rotolo M, Sun Y, **Wang C**, Giménez-Lirola LG, Baum D, Main R, Zimmerman J. September 2016. Improving our response to swine health challenges: new perspectives in sampling for monitoring and surveillance. Proceedings, 1st Nanjing Agricultural University Sino-US Swine Industry Summit Meeting. Nanjing, PR China. p 4.
 74. Rotolo M, Giménez-Lirola LG, Sun Y, Bade S, **Wang C**, Baum D, Gauger P, Hoogland M, Main R, Zimmerman J. June 2016. Developing sampling guidelines for oral fluid-based PRRSV surveillance. Proc 24nd International Pig Veterinary Society Congress. Dublin, Ireland, Abstract PO-PW1-086.
 73. Rotolo M, Giménez-Lirola L, Sun Y, Bade S, **Wang C**, Baum D, Gauger P, Hoogland M, Main R, Zimmerman J. Feb 2016. Developing sampling guidelines for oral fluid-based PRRSV surveillance. Proc 47th Ann Meet Am Assoc Swine Veterinarians. New Orleans, Louisiana, p. 50.
 75. Poonsuk, K.; Giménez-Lirola, L. G.; Gonzalez W, Zhang, J, Q Chen, L Correa da Silva Carrion, C Olsen, R Magtoto, J Johnson, **Wang C**, D Madson, R Main, J Zimmerman, KJ Yoon Defining PEDV maternal immunity and correlates of neonatal protection - AASV Annual Meeting - 2015
 71. Zhang J, Chen Q, da Silva Carrion LC, Olsen C, Magtoto R, Johnson J, **Wang C**, Madson D, Main R, Zimmerman J, Yoon KJ. June 2015. Maternal humoral immunity and neonatal protection against PEDV infection. Proc International Symposium on Emerging and Re-Emerging Pig Diseases, Kyoto Japan, p 44.
 70. Rotolo M, Giménez-Lirola L, Abate S, Hoogland M, **Wang C**, Baum D, Gauger P, Harmon K, Main R, Ramirez A, Zimmerman J. February 2015. Use of oral fluids in PEDV surveillance. Pre-Conference Seminar - Coronavirus diagnostics and surveillance. 46th Annual Meeting of the American Association of Swine Veterinarians. Orlando, Florida. Proc Seminar #2, pp. 15-20.

Promotion to Associate Professor

69. ***Sun, Y., Wang, C.**, Zimmerman, J. Hidden Markov Modeling of Oral Fluid Detection of PRRSV Antibody in Swine Herds. Joint Statistical Meetings, Boston, MA, August, 2014.
68. ***Liu, F., Wang, C.**, Liu, P. Zero-Inflated Poisson Regression for Identification of Essential Genes with Tn-Seq Data. Joint Statistical Meetings, Boston, MA, August, 2014.
67. Giménez-Lirola LG, Mur L, Rivera B, **Wang C**, Lizano S, Goodell C, Rowland R, Harris DL, Gallardo C, Arias M, Sánchez-Vizcaíno JM, Zimmerman J. June 11, 2014. The African swine fever rp30 ELISA detects antibody in serum and/or oral fluid specimens. 23rd International Pig Veterinary Society Congress. Cancún, México.
66. Giménez-Lirola LG, Mur L, Rivera B, **Wang C**, Rowland R, Harris DL, Gallardo C, Arias M, Zimmerman J, Sánchez-Vizcaíno JM. June 10, 2014. Multiplex Luminex® assay for detection of antibodies against three major proteins of ASFV. 23rd International Pig Veterinary Society Congress. Cancún, México.
65. Goodell CK, Prickett JR, Kittawornrat A, **Wang C**, Zimmerman J. June 11, 2014. Influenza antibody detection in swine using the influenza A multispecies ELISA - experimental study. 23rd International Pig Veterinary Society Congress. Cancún, México.
64. Holmes A, Gonzalez W, Gauger P, Abate S, Yoon KJ, **Wang C**, Zimmerman J. June 11, 2014. Effect of pretreatment on detection of PRRSV in oral fluid by qRT-PCR assay. 23rd International Pig Veterinary Society Congress. Cancún, México.
63. Holmes A, Kittawornrat A, Goodell C, Panyasing Y, **Wang C**, Hoff S, Subramanya K, Zimmerman J. June 10, 2014. Behavioral aspects of oral fluid sample collection. 23rd International Pig Veterinary Society Congress. Cancún, México.
62. Kittawornrat A, Panyasing Y, Goodell C, **Wang C**, Gauger P, Harmon K, Rauh R, Defresne L, Levis I, Zimmerman J. June 9, 2014. PRRSV surveillance using pre-weaning oral fluid samples detects circulation of wild-type PRRSV. 23rd International Pig Veterinary Society Congress. Cancún, México.
61. Panyasing Y, Goodell C, Kittawornrat A, **Wang C**, Levis I, Defresne L, Rauh R, Gauger P, Zhang J, Lin K, Nezai S, Azeem S, Yoon KJ, Zimmerman J. June 10, 2014. Influenza A virus (IAV) surveillance using pre-weaning oral fluid samples. 23rd International Pig Veterinary Society Congress. Cancún, México.
60. Panyasing Y, Goodell C, Kittawornrat A, **Wang C**, Levis I, Desfresne L, Rauh R, Gauger P, Zhang J, Lin K, Nezami S, Azeem S, Yoon K-J, Zimmerman J. March 2014. Influenza A virus (IAV) surveillance using pre-weaning oral fluid samples. Proceedings of the American Association of Swine Veterinarians. Dallas, Texas, p. 421.
59. Liu, P., **Wang, C.**, Liu, F.*, A Novel Bayesian Approach for Differential Expression Analysis with RNA-Seq Data. Joint Statistical Meetings, Montreal, Canada, August, 2013.
58. Fang, Y. *, **Wang, C.**, Design of Repeated Sampling for Disease Detection Problem. Joint Statistical Meetings, Montreal, Canada, August, 2013.
57. Olsen C, Coetzee J, Karriker L, Kittawornrat A, Lizano S, Main R, Meiszberg A, Panyasing Y, **Wang C**, Zimmerman J. March 2013. Effect of sample collection material on the detection of PRRSV in oral fluid. Proceedings of the American Association of Swine Veterinarians. San Diego, California, p. 63.

56. Olsen C, **Wang C**, Christopher-Hennings J, Doolittle K, Abate S, Harmon K, Kittawornrat K, Lizano A, Main R, Nelson E, Otterson T, Panyasing Y, Rademacher C, Rauh R, Shah R, Zimmerman J. March 2013. Probability of detecting PRRSV infection using pen-based swine oral fluid specimens as a function of within-pen prevalence. Proceedings of the American Association of Swine Veterinarians. San Diego, California, p. 109-110.
55. Panyasing Y, Goodell C, Giménez-Lirola L, **Wang C**, Kittawornrat A, Lisano S, Lopez P, Schwartz K, Zimmerman J. Detection of influenza A virus nucleoprotein antibody (IgM, IgA, IgG) in serum and oral fluid specimens. Proceedings of the 44th annual meeting of the American Association of Swine Veterinarians. March 2-5, 2013, San Diego, California, p. 409.
54. Kittawornrat A, **Wang C**, Anderson G, Ballagi A, Broes A, Carman S, Doolittle K, Galeota J, Johnson J, Lizano S, Nelson E, Patnayak D, Pogranichniy R, Rice A, Scherba G, Zimmerman J. Ring test evaluation for the detection of PRRSV antibody in oral fluid specimens using a commercial PRRSV serum antibody ELISA. Proceedings of the 44th annual meeting of the American Association of Swine Veterinarians. March 3, 2013, San Diego, California, p.61
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52. Panyasing Y, Irwin C, **Wang C**, Kittawornrat A, Prickett J, Schwartz KJ, Ballagi A, Zimmerman J. June 2012. Adaptation of a commercial nucleoprotein (NP) blocking ELISA to the detection of antibodies against influenza A virus in pig oral fluid specimens. Proceedings, 22nd International Pig Veterinary Society Congress. Jeju, Korea, p. 426.
51. Olsen C, Coetzee J, Karriker J, Kittawornrat A, Lizano S, Main R, Meiszberg A, Panyasing Y, **Wang C**, Zimmerman J. June 2012. Effect of sample collection material on detection of PRRSV antibody in oral fluid. Proceedings, 22nd International Pig Veterinary Society Congress. Jeju, Korea, p. 986.
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48. Kittawornrat A, **Wang C**, Olsen C, Panyasing Y, Ballagi A, Rice A, Lizano S, Johnson J, Main R, Rowland R, Zimmerman J. April, 2012. Diagnostic performance of the PRRS oral fluid IgG ELISA. 4th European Symposium of Porcine Health Management. Bruges, Belgium, p. 171.
47. **Wang, C.**, Turnbull, B. W., Nielsen, S. S. and Gröhn, Y. T., Bayesian analysis of longitudinal Johne's disease diagnostic data without a gold standard test. 2011 ADSA-ASAS Joint Annual Meeting. July 2011, New Orleans, LA.

46. Kittawornrat A, Prickett J, **Wang C**, Olsen C, Irwin C, Panyasing Y, Ballagi A, Rice A, Main R, Rademacher C, Hoogland M, Zimmerman J. October 2011. Adaptation of a commercial PRRS serum antibody ELISA to oral fluid specimens. American Association of Veterinary Laboratory Diagnosticians. Buffalo, New York, p. 99.
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44. Kittawornrat A, Prickett J, **Wang C**, Olsen C, Irwin C, Panyasing Y, Ballagi A, Rice A, Main R, Rademacher C, Hoogland M, Lowe J, Zimmerman J. October 2011. Diagnostic performance of a commercial PRRS serum antibody ELISA adapted to oral fluid specimens: field samples. American Association of Veterinary Laboratory Diagnosticians. Buffalo, New York, p. 101.
43. Kittawornrat A, Prickett J, **Wang C**, Olsen C, Irwin C, Panyasing Y, Ballagi A, Rice A, Main R, Rademacher C, Hoogland M, Zimmerman J. October 2, 2011. Adaptation of a commercial PRRS serum antibody ELISA to oral fluid specimens. American Association of Veterinary Laboratory Diagnosticians. Buffalo, New York, p. 99.
42. Kittawornrat A, Prickett J, **Wang C**, Olsen C, Irwin C, Panyasing Y, Ballagi A, Rice A, Rowland R, Zimmerman J. October 2, 2011. Diagnostic performance of a commercial PRRS serum Antibody ELISA adapted to oral fluid sapecimens: longitudinal response in experimentally-inoculated populations. American Association of Veterinary Laboratory Diagnosticians. Buffalo, New York, p. 100.
41. Kittawornrat A, Prickett J, **Wang C**, Olsen C, Irwin C, Panyasing Y, Ballagi A, Rice A, Main R, Rademacher C, Hoogland M, Lowe J, Zimmerman J. October 2, 2011. Diagnostic performance of a commercial PRRS serum antibody ELISA adapted to oral fluid specimens: field samples. American Association of Veterinary Laboratory Diagnosticians. Buffalo, New York, p. 101.
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39. Irwin C, Zimmerman J, Jenkins-Moore M, Kitikoon P, **Wang C**, Anderson J, Leslie-Steen P, Patnayak D, Zhang J. October 2011. Virus Isolation from oral fluid using a check test. 54th Annual Conference American Association of Veterinary Laboratory Diagnosticians. Buffalo, NY. p 68.
38. Ramirez A, **Wang C**, Prickett J, Pogranichniy R, Yoon KJ, Main R, Rademacher C, Hoogland M, Johnson JK, Kurtz A, Kurtz E, Zimmerman J. June 2011. Routine collection of epidemiological infectious disease data in pig populations using oral fluids. Proc 6th International Symposium on Emerging and Re-emerging Pig Diseases. Barcelona, Spain, p. 337.
37. Irwin CK, Zimmerman J, Johnson J, **Wang C**. June 2011. Influenza A antibody detection over time using a nucleoprotein blocking ELISA. Proc 6th International Symposium on Emerging and Re-emerging Pig Diseases. Barcelona, Spain, p. 282.

36. Cutler T, **Wang C**, Hoff S, Kittawornrat A, Zimmerman J. June 2011. Estimating the median infectious dose (ID₅₀) of PRRSV isolate MN-184 via aerosol exposure. Proc 6th International Symposium on Emerging and Re-emerging Pig Diseases. Barcelona, Spain, p. 188.
35. Kittawornrat A, Engle M, Chittick W, Johnson J, Patnayak D, **Wang C**, Whitney D, Olsen C, Prickett J, Schwartz T, Schwartz K, Zimmerman J. June 2011. Porcine reproductive and respiratory syndrome virus (PRRSV) in serum and oral fluid samples from individual boars: Will oral fluid replace serum for PRRSV surveillance? Proc 6th International Symposium on Emerging and Re-emerging Pig Diseases. Barcelona, Spain, p. 58.
34. Kittawornrat A, Engle M, Chittick W, Johnson J, **Wang C**, Whitney D, Olsen C, Prickett J, Schwartz T, Schwartz K, Zimmerman J. June 2011. Detection of anti- PRRSV antibodies in oral fluid samples from individual boars using a commercial PRRSV ELISA. Proc 6th International Symposium on Emerging and Re-emerging Pig Diseases. Barcelona, Spain, p. 216.
33. Irwin C, Prickett J, Kittawornrat A, Johnson J, **Wang C**, Zimmerman J.J. December 6, 2010. Influenza antibody detection in experimentally inoculated swine over time using a commercially available nucleoprotein ELISA. 91st Ann Meet Conference of Research Workers in Animal Diseases. Chicago, Illinois, Abstr #148. Outstanding Graduate Student Presentation Award (ACVM).
32. Irwin C, Prickett J, Kittawornrat A, Johnson J, **Wang C**, Zimmerman J.J. December 6, 2010. A predictive model for the detection of influenza antibodies over time using a commercially available nucleoprotein ELISA. 91st Ann Meet Conference of Research Workers in Animal Diseases. Chicago, Illinois, Abstr #149.
31. Irwin C, Prickett J, Kittawornrat A, Johnson J, **Wang C**, Zimmerman J.J. December 6, 2010. Influenza antibody detection in experimentally inoculated swine over time using two commercially-available indirect ELISAs. 91st Ann Meet Conference of Research Workers in Animal Diseases. Chicago, Illinois, Abstr #150.
30. Kittawornrat A, Chittick W, Johnson J, Prickett J, **Wang C**, Schwartz T, Schwartz K, Whitney D, Olsen C, Zimmerman J. December 6, 2010. PRRSV in serum and oral fluid samples from individual boars: Will oral fluid replace serum for PRRSV surveillance? Proc 91st Ann Meet Conference of Research Workers in Animal Diseases, Abstr #145.
29. Kittawornrat A, Prickett J, Johnson J, Whitney D, Olsen C, Schwartz T, Schwartz K, **Wang C**, Zimmerman J. December 6, 2010. Detection of anti-PRRSV antibodies in oral fluid samples from individual boars using a commercial PRRS ELISA. Proc 91st Ann Meet Conference of Research Workers in Animal Diseases, Abstr #146.
28. Kittawornrat A, M Engle, W Chittick, J Johnson, D Patnayak, **C Wang**, D Whitney, C Olsen, J Prickett, T Schwartz, K Schwartz, J Zimmerman. November 13, 2010. Porcine reproductive and respiratory syndrome virus (PRRSV) in serum and oral fluid samples from individual boars: Will oral fluid replace serum for PRRSV surveillance? 53rd Annual Conference, American Association of Veterinary Laboratory Diagnosticians. Minneapolis, Minnesota. P51
27. Kittawornrat A, M Engle, W Chittick, J Johnson, D Patnayak, **C Wang**, D Whitney, C Olsen, J Prickett, T Schwartz, K Schwartz, J Zimmerman. November 13, 2010. Detection of anti-PRRSV antibodies in oral fluid samples from individual boars using a commercial

- ELISA. 53rd Annual Conference, American Association of Veterinary Laboratory Diagnosticians. Minneapolis, Minnesota. P52
26. **Wang C**, Prickett J, Hoogland M, Main R, Rademacher C, Chittick W, Kolb J, Kurtz A, Kurtz E, Muñoz R, Zimmerman JJ. September 2010. Probability of detecting a singleton PRRSV viremic pig using pen-based oral fluid samples. Allen D. Lemn Swine Conference. St. Paul, Minnesota, p. 47.
 25. Kittawornrat A, M Engle, W Chittick, J Johnson, D Patnayak, **C Wang**, D Whitney, C Olsen, J Prickett, T Schwartz, K Schwartz, J Zimmerman. September 2010. Virus del síndrome respiratorio y reproductivo porcino (PRRSV) en suero y fluidos orales de sementales alojados individualmente. ¿Reemplazarán los fluidos orales al suero en estudios de vigilancia epidemiológica para PRRSV? XXII Congreso Panamericano de Ciencias Veterinarias. Lima, Peru.
 24. Jergens AE, Nettleton D, Suchodolski JS, Wymore M, Wilke V, Dowd S, Steiner JM, **Wang C**, Wannemuehler MJ, (2010). Relationship of mucosal gene expression to microbiota composition in dogs with inflammatory bowel disease. *Journal of Veterinary Internal Medicine*, 24(3), 725-725, meeting abstract: 177.
 23. Morrison J, Jergens A, Deitz K, Miles K, King R, **Wang C**, Winter M, Flatjord C, Hodnefield A (2010). Comparison of models for predicting renal disease following i-131 therapy for feline hyperthyroidism. *Journal of Veterinary Internal Medicine*, 24(3), 744-745, meeting abstract: 242.
 22. Morrison J, Jergens A, Deitz K, Miles K, King R, **Wang C**, Winter M, Flatjord C, Hodnefield A (2010). Investigation of prognostic factors for the development of renal disease following i-131 therapy in feline hyperthyroidism. *Journal of Veterinary Internal Medicine*, 24(3), 725-725, meeting abstract: 243.
 21. Morrison J, Clemans J, **Wang C** (2010). Retrospective investigation of survival factors in canine disseminated histoplasmosis. *Journal of Veterinary Internal Medicine*, 24(3), 744-745, meeting abstract: 305.
 20. Kittawornrat A, Engle M, Johnson J, **Wang C**, Whitney D, Olsen C, Prickett J, Schwartz T, Schwartz K, Zimmerman J. (2010). Colección de muestras de fluidos orales para diagnóstico de sementales individuales. XXII Congreso Panamericano de Ciencias Veterinarias. Lima, Peru.
 19. Irwin CK, O'Connor A, **Wang C**, Yoon KJ, Zimmerman J. (2010). Assessing the evidence of published studies reporting factors associated with the stability of influenza in the environment using a systematic review. *Proceedings of the American Association of Swine Veterinarians*. Omaha, Nebraska, pp. 363.
 18. Cutler TD, Kittawornrat A, Hoff SJ, **Wang C**, Zimmerman JJ. March 2010. Median infectious dose (ID50) of PRRSV isolate MN-184 for young pigs via aerosol exposure. *Proceedings of the American Association of Swine Veterinarians*. Omaha, Nebraska, pp. 361.
 17. Cutler TD, Hoff SJ, **Wang C**, Warren KJ, Zhou F, Qin Q, Miller C, Ridpath JF, Yoon K-J, Zimmerman J. March 2010. UV254 inactivation of selected viral pathogens. *Proceedings of the American Association of Swine Veterinarians*. Omaha, Nebraska, pp. 115.
 16. Kittawornrat A, Engle MJ, Johnson JF, Chittick WA, Prickett JR, Schwartz TJ, Whitney DJ, Olsen CW, Schwartz KJ, **Wang C**, Zimmerman. 2010. Use of oral fluid samples to detect

- PRRSV infection in individual boars. Proceedings of the 21st International Pig Veterinary Society Congress. Vancouver, Canada, p. 201.
15. Kittawornrat A, Chittick W, Stensland W, Prickett JR, **Wang C**, Strait E, Yoon K-J, Zimmerman JJ. July 2010. Optimization of PRRS PCR for oral fluid testing. Proceedings of the 21st International Pig Veterinary Society Congress. Vancouver, Canada, p. 484.
 14. Cutler TD, Hoff SJ, **Wang C**, Warren KJ, Zhou F, Qin Q, Miller C, Ridpath J, Yoon K-J, Zimmerman JJ. July 2010. UV254 inactivation of selected viral pathogens. Proceedings of the 21st International Pig Veterinary Society Congress. Vancouver, Canada, p. 936.
 13. Johnson J, Engle M, Kittawornrat A, Prickett JR, Schwartz, T, Whitney D, Olsen C, Schwartz K, **Wang C**, Zimmerman J. July 2010. Oral fluid diagnostic samples can be collected from individually-penned adult swine. Proceedings of the 21st International Pig Veterinary Society Congress. Vancouver, Canada, p. 512.
 12. Cutler TD, Kittawornrat A, Hoff SJ, **Wang C**, Zimmerman JJ. July 2010. Median infectious dose (ID50) of PRRSV isolate MN-184 for young pigs via aerosol exposure. Proceedings of the 21st International Pig Veterinary Society Congress. Vancouver, Canada, p. 506.
 11. Lin K, **Wang C**, Murtaugh M, Wong S, Yoon K-J, Halbur PG, Zimmerman J, Meng X-J, Ramamoorthy S. June 2010. A micro-bead array (MBA)-based immunoassay for the simultaneous detection of antibody responses to porcine circovirus type 2 (PCV2) and porcine reproductive and respiratory syndrome virus (PRRSV). Proc 49th North Central Conference of Veterinary Laboratory Diagnosticians. Manhattan, Kansas.
 10. Christensen BW, **Wang C**, Penfold LM. Developing a cooled semen protocol for captive breeding of Somali wild ass (*Equus africanus somaliensis*). 7th Biennial Meeting of the Association for Applied Animal Andrology, August 28-29, 2010, Sydney, Australia, 2010.
 9. Christensen BW, **Wang C**, Citino S, Penfold LM. Developing a cooled semen protocol for captive breeding of okapi (*Okapia johnstoni*). 7th Biennial Meeting of the Association for Applied Animal Andrology, August 28-29, 2010, Sydney, Australia, 2010.
 8. Christensen BW, Bauman K, Junge R, VanSant L, Lorton S, **Wang C**, Asa CS. Semen cryopreservation and transcervical insemination in the Mexican gray wolf (*Canis lupus baileyi*). Annual meeting of the American Association of Zoo Veterinarians, October 23-29, 2010, South Padre Island, Texas, 2010.
 7. Cutler TD, Kittawornrat A, Hoff SJ, **Wang C**, Zimmerman JJ. (2009). Infectious dose (ID50) of PRRSV isolate MN-184 for young pigs via aerosol exposure. Proc 2009 International PRRS Symposium. Chicago, Illinois, p 67.
 6. Cutler TD, Hoff SJ, **Wang C**, Warren KJ, Zhou F, Qin Q, Miller C, Ridpath JF, Yoon K-J, Zimmerman J. (2009). UV254 inactivation of selected viral pathogens. Proc 2009 International PRRS Symposium. Chicago, Illinois, p 66.
 5. Cutler T, Hoff S, **Wang C**, Warren K, Zhou F, Qin Q, Miller C, Ridpath J, Yoon K-J, Zimmerman J. (2009). UV254 Inactivation of Selected Viral Pathogens. 52st Annual Conference, American Association of Veterinary Laboratory Diagnosticians. San Diego, California, p. 124.
 4. Cutler T, Kittawornrat A, Hoff S, **Wang C**, Zimmerman J. (2009). Median infectious dose (ID50) of PRRSV isolate MN-184 for young pigs via aerosol exposure. 52st Annual Conference, American Association of Veterinary Laboratory Diagnosticians. San Diego, California, p. 110.

3. Cutler TD, Hoff SJ, **Wang C**, Warren KJ, Zhou F, Qin Q, Miller C, Ridpath JF, Yoon K-J, Zimmerman J. December 2009. UV254 inactivation of selected viral pathogens. Proc 90th Ann Meet Conference of Research Workers in Animal Diseases, Abstr #23.
2. **Wang, C.**, Turnbull, B. W., Gröhn, Y. T. (2007). Adjusting ROC curve estimates for covariates without gold standard tests, 2006 Proceedings of the American Statistical Association, Statistics in Epidemiology Section, Seattle, WA: American Statistical Association, 2645-2649.
1. **Wang, C.**, Turnbull, B. W., Gröhn, Y. T. (2005). A flexible Bayesian approach to estimate ROC curves when there is no gold standard test, 2005 Proceedings of the American Statistical Association, Biometry Section, Minneapolis, MN: American Statistical Association, 407-410.

PROFESSIONAL ASSOCIATIONS

- ◆ American Statistical Association (ASA)
- ◆ Institute of Mathematical Statistics (IMS)
- ◆ International Biometric Society (ENAR)
- ◆ American Dairy Science Association (ADSA)
- ◆ American Association of Veterinary Laboratory Diagnosticians (AAVLD)
- ◆ International Chinese Statistical Association (ICSA)

PROFESSIONAL ACTIVITIES

- ◆ US SHIP (Swine Health Improvement Plan) Sampling and Testing Committee (2021)
- ◆ Living Systematic Review Animal Feeding Operations and Human Health panel (2021)
- ◆ Technical Committee of the USDA North Central Regional Project 229: Detection and control of porcine reproductive and respiratory syndrome virus and emerging viral diseases of swine. (2014-present)
- ◆ Editorial Board of peer-reviewed Journals
 - BMC Veterinary Medicine* (2021-present)
 - Equine Veterinary Journal* (2011-present)
 - PLOS ONE* (2022-present)
- ◆ External peer reviewer for professional journals
 - Biometrics*
 - Bioinformatics*
 - Canadian Veterinary Journal*
 - Contemporary Clinical Trials*
 - Equine Veterinary Journal*
 - Indian Journal of Statistics*
 - Journal of Applied Statistics*
 - Journal of Virological Methods*
 - Journal of Wildlife Diseases*
 - PLOS ONE*
 - Preventive Veterinary Medicine*
 - Statistical Applications in Genetics and Molecular Biology*
 - Statistics in Biosciences*
 - Statistics in Medicine*

Veterinary Record

- ◆ External peer reviewer for book proposals
CRC Press, Taylor & Francis Group, London, UK
- ◆ Chair for Topic Contributed Session 459 -- Shrinkage Theory and its Applications, *Joint statistical meetings*, Salt Lake City, UT, 2007
- ◆ Organizer for Invited Session 26 -- Statistical Methods in Disease Surveillance, *ICSA/ISBS Joint Statistics Conference*, Bethesda, MD, USA, 2013

HONORS and AWARDS

- ◆ Editor's Choice, Preventive Veterinary Medicine, 2021.
- ◆ Student Paper Award, the Statistics in Epidemiology Section, American Statistical Association, 2006
- ◆ Paper Award, Johne's Disease Integrated Program (JDIP) 2nd Annual Conference, 2006
- ◆ Best Student Paper Award, International Chinese Statistical Association, 2005
- ◆ Graduate School Travel Award and Fellowship, Cornell University 2005, 2006
- ◆ Excellent Academic Award, Peking University, 2000
- ◆ Eaglet Award, Peking University, 1998, 1999
- ◆ Freshman Scholarship, Peking University, 1997
- ◆ Silver Medal in CMO (Chinese Mathematics Olympic), 1997

GRADUATE PROGRAM OF STUDY COMMITTEES

Current

- ◆ Major professor for 3 PhD students

McKeen, Lauren	Statistics	expected 2023
Morris, Paul	Statistics	expected 2023
Ye, Fangshu	Statistics	expected 2024

- and 1 MS student:

Pang, Jinji	Statistics	expected 2023
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- ◆ Committee member for 9 PhD students

Zhao, Wenting	Statistics
Amin, Shirazi	Statistics
Silva, Ana Paula	Veterinary Microbiology
Huang, Minhong	Molecular and Cellular Biology
Wannarat, Yim-im	Veterinary Microbiology
Li, Xiaoyin	Economics
Badvela, Mani	Meat Science
O'Neill, Kevin	Veterinary Microbiology
Fan, Huanping	Economics

- and 1 MS students.

Zhu, Jinhui	Veterinary Preventive Medicine
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Completed

- ◆ Major Professor for 9 PhD students

Hu, Dapeng	Statistics	2021
Zhang, Min	Statistics	2021
Ji, Ju	Statistics	2019
Goren, Emily	Statistics	2019
Du, Yingzhou	Statistics	2018
Yuan, Chaohui	Statistics	2018
Sun, Yaxuan	Statistics	2017
Liu, Fangfang	Statistics	2015
Lin, Hui	Statistics	2013

- and 10 MS students

McKeen, Lauren	Statistics	2020
Morris, Paul	Statistics	2020
Liu, Pu	Statistics	2020
Zhao, Jing	Statistics	2019
Wang, Chao	Statistics	2015
Ji, Ju	Statistics	2015
Sun, Yaxuan	Statistics	2014
Du, Yingzhou	Statistics	2014
Fang, Yinan	Statistics	2013
Lin, Hui	Statistics	2011

- ◆ Committee member for 24 PhD students

Tian, Qinglong	Statistics	2021
Cheng, Ting-Yu	Veterinary Microbiology	2021
Moura, Cesar A. A.	Population Sciences Animal Health	2020
Bi, Ran	Statistics	2018
Chakraborty, Pranamesh	Civil, Const, & Envirng Engineering	2019
Meijer, Nathan	Kinesiology	2018
Wang, Zhonglei	Statistics	2018
Rotolo, Marisa	Veterinary Microbiology	2017
Poonsuk, Korakrit	Veterinary Microbiology	2017
Agbemafla, Isaac	Nutritional Sciences	2020
Ulloa, Nehemias	Statistics	2019
Trevisan, Giovanni	Population Sciences Animal Health	2020
Chen, Qi	Veterinary Microbiology	2016
Shi, Heliang	Biomedical Sciences	2017
Michaud, Nicholas	Statistics	2016
Zhao, Xuefei	Agricultural & Biosystem Engrg	2015
Irwin, Christa K.	Veterinary Microbiology	2013
Panyasing, Yaowalak	Veterinary Microbiology	2013
Kittawornrat, Apisit	Veterinary Microbiology	2013
Wang, Bing	Veterinary Microbiology	2011
Stanton, Brendon	Mathematics	2011
Carruthers, Michael	Veterinary Microbiology	2009
Zhang, Yinghui	Nutritional Sciences	2014
Bai, Yang	Kinesiology	2016

and 9 MS students

Wang, Hao	Statistics	2019
Streauslin, Nicholas	Vet Micro and Prev Med	2020
Li, Gerui	Food Science & Technology	2013
Redifer, Colby	Animal Science	2018
Hare, Eric	Statistics	2014
Krausch, Julianne	Food Science & Technology	2011
Hua, Hong	Statistics	2009
Robb, Caleb	Veterinary Preventive Medicine	2015
Chittick, Wayne A.	Veterinary Preventive Medicine	2012

TEACHING EXPERIENCES

At Iowa State University:

- ◆ **Instructor-in-charge for VDPAM 527:** Applied Statistical Methods in Population Studies, Iowa State University, Fall 2009, Fall 2011, Fall 2013, Fall 2015, Fall 2017, Fall 2019, Fall 2021
- ◆ **Instructor-in-charge for STAT 587:** Statistical Methods for Researchers, Iowa State University, Fall 2019, Fall 2020
- ◆ **Instructor (one lecture) for VDPAM 562X:** Applied Diagnostic Technologies and Medicine for Infectious Disease, Iowa State University, Fall 2020
- ◆ **Instructor-in-charge for STAT 401:** Statistical Methods for Researchers, Iowa State University, Fall 2009, Fall 2010, Fall 2011, Fall 2014, Fall 2015, Fall 2017
- ◆ **Instructor-in-charge for STAT 565:** Methods in Biostatistics and Epidemiology, Iowa State University, Fall 2013, Fall 2016
- ◆ **Instructor-in-charge for STAT 430:** Empirical Methods for Computer Scientists, Iowa State University, Fall 2012

Elsewhere:

- ◆ **Instructor-in-charge for STA 570:** Basic Statistical Analysis, University of Kentucky, Fall 2008
- ◆ **Instructor-in-charge for CPH 930:** Advanced Biostatistics Methods in Public Health, University of Kentucky, Spring 2008
- ◆ **Instructor-in-charge for STA 291:** Statistical Method, University of Kentucky, Fall 2007
- ◆ **Instructor-in-charge for MATH 171:** Statistical Theory and Application, Cornell University, Fall 2006, Spring 2007

INSTITUTIONAL SERVICE

Role	Committee	Period of Service
Member	Anniversary Celebration Committee Statistics	2021-2022
Member	Computer, Library & Information Management Committee, College of Veterinary Medicine	2020-2022

Member	Research and Graduate Studies Committee, VDPAM	2019-2022
Member	Karas Award Committee, Iowa State University	2019-2020
Judge	College of Veterinary Medicine Research Day Poster Competition	2019-2021
Member	Faculty Search Committee, VDPAM	2019-2021
Member	Exam Committee, Statistics	2019-2020
Member	Research and Graduate Studies Committee, VDPAM	2015-2019
Member	Award Committee, Statistics	2015-2019
Chair	Minor Committee, Statistics	2013-2015
Member	IT Committee, VDPAM	2011-2014
Member	Minor Committee, Statistics	2011-2013
Member	Library Committee, Statistics	2009-2014
Member	Social Committee, Statistics	2009-2013