
BIOGRAPHICAL SKETCH**Frank M. Andrews, DVM, MS, DACVIM (LAIM)**

NAME Frank M. Andrews	POSITION TITLE LVMA Equine Committee Professor and Director, Equine Health Studies Program School of Vet Med, Louisiana State University		
eRA COMMONS USER NAME (credential, e.g., agency login) fandrews			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	MM/YY	FIELD OF STUDY
Washington State University, Pullman, WA	B.S.	6/79	Microbiology and Public Health
Washington State University, Pullman, WA	B.S.		
Washington State University, Pullman, WA College of Veterinary Medicine	D.V.M.	6/80	Veterinary Science
		5/83	Veterinary Medicine
Washington State University, Pullman, WA College of Veterinary Medicine	M.S.	8/83	Veterinary Science
The Ohio State University, Columbus, OH College of Veterinary Medicine	Residency Certificate	7/87	Equine Medicine and Surgery

A. Personal Statement

My research includes general equine health, clinical gastrointestinal diseases, and neurologic diseases affecting the equine species. As PI or co-Investigator on several university and industrial-funded grants, I have developed strong ties with the equine community. I successfully administered projects (e.g. staffing, research protections, budget), collaborated with other researchers, and produced peer-reviewed publications from projects in which I have participated. As a result of these previous experiences, I am aware of the importance of frequent communication among project members and of constructing a realistic research plan, timeline, and budget. Equine research fits within the mission LSU Equine (Equine Health Studies Program, <https://www.lsu.edu/vetmed/ehsp/index.php>) at Louisiana State University School of Veterinary Medicine. I am a clinician-researcher at Louisiana State University School of Veterinary Medicine and have 32 years experience with equine research and I am Director of the Equine Health Studies Program (LSU Equine), a State funded program that emphasizes translational research in horses and disseminates research findings to the State and regional stakeholders. As Director, my main focus is to lead by example and contribute and help others to be successful in equine research. My publications documenting my collaboration and contributions to equine health are documented below.

B. Positions and Honors

1983-1984	Staff Veterinarian, Associated Veterinary Clinics, Walla Walla, WA
1987-1988	Research Associate, Department of Veterinary Clinical Sciences, The Ohio State University, College of Veterinary Medicine, Columbus, OH
1989	Diplomate, American College of Veterinary Internal Medicine, Specialty in Large Animal Internal Medicine, by examination.
1988-1992	Assistant Professor, Equine Medicine, University of Tennessee, College of Veterinary Medicine, Knoxville, TN
1992-1997	Associate Professor of Equine Medicine, University of Tennessee, College of Veterinary Medicine, Knoxville, TN
1997-2008	Professor of Equine Medicine and Section Chief, University of Tennessee, College of Veterinary Medicine, Knoxville, TN
2008-Present	LVMA Equine Committee Professor and Director, Equine Health Studies Program, Louisiana State University, School of Veterinary Medicine, Baton Rouge, LA

Honors

1987	Who's Who in Veterinary Medicine
1987	Student Chapter, American Veterinary Medical Association Teaching Award
1991	Who's Who in Veterinary Medicine
1994-1997	Phi Zeta, University of Tennessee Chapter
1996	Staff Equestrian Veterinarian, XXVI Centennial Olympic Games, Atlanta, Georgia, July–August
1999	Pfizer Award for Research Excellence in Animal Health, 1999
2008	Webster Pendergrass Award for Outstanding Service, UTCVM, 2008
2018	Distinguished Scholar Award, LSU School of Veterinary Medicine

C. Selected Peer-reviewed Publications

1. De Aguiar, L. H., Gomes, V. C. L., Paul, L. J., Andrews, F. M., Chaffin, M. K., Sones, J. L. (2021) Renal failure in a pregnant mare. First published: 16 December 2020; *Equine Vet Educ.* Early View. <https://doi.org/10.1111/eve.13428>
 2. St. Blanc M., Banse, H., Retif, M., Arana-Valencia N., Keowen, M.L., Garza, Jr., F., Liu, Chin-Chi, Gray, L.F. and Andrews, F.M. (2021) Effects of supplements containing Turmeric and Devil's Claw on equine gastric ulcer scores and gastric juice pH. *Equine Vet. Educ.* (In press, Early View). doi: 10.1111/eve.13404
 3. Camacho-Luna, P., Andrews, F.M., Keowen, M.L., Garza, Jr., F., Liu, C-C., Lamp, B., Olijve, J. (2021) The Effect of Porcine Hydrolyzed Collagen on the Gastric Ulcer Scores, Gastric Juice pH, Gastrin and Amino Acid Concentrations in Horses. *Equine Vet. Educ.* (In press, Early View). doi: 10.1111/eve.13409
 4. Watanabe, T.T.N., Andrews, F.M., Camacho-Luna, P., Krueger, C., Bauer, R. (2021) Malignant gastrointestinal stromal tumor with transplantation metastasis in a horse. *JAVMA* (Accepted 3/09/2019 and In Press).
 5. Jacobs, R. D., Gordon, M. B. E., Vineyard, K.R., Keowen, M.L., Garza, Jr., F., Andrews, F.M. (2021) The Effect of a Seaweed-Derived Calcium Supplement on Gastric Juice pH in the Horse. *J. Equine Vet. Sci.* 95, 1-5, Early View, (In Press).
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6. Ricord, M., Andrews, F. M., Yñiguez, F.J.M., Keowen, M., Garza, Jr., F., Paul, L., Chapman, A., Banse, H.E. (2021) Impact of concurrent treatment with omeprazole on phenylbutazone-induced equine gastric ulcer syndrome (EGUS). *Equine Vet. J.* 53, 356-361.
 7. Banse, H. Andrews, F.M. (2019) Equine glandular gastric disease: prevalence, impact and management strategies. *Veterinary Medicine: Research and Reports.* 10, 69-76.
 8. Liu, Y., Siard M., Adams, A., Keowen, M.L., Miller T.K., Garza, Jr., F., Andrews F.M., Seeram N.P. (2018) Simultaneous quantification of free curcuminoids and their metabolites in equine plasma by LC-ESI-MS/MS. *J. Pharmacology and Biomedical Analysis* 154, 31-39.
 9. Camacho-Luna, Pilar, Buchanan, BR., Andrews, F.M. (2018) Advances in Diagnostics and Treatments in Horses and Foals with Gastric and Duodenal Ulcers. *Veterinary Clinics N. A.: Equine Practice.* 34(1), 97 – 111.
 10. Zavoshti, Fereydon Rezazadeh and Andrews, FM. (2017) Therapeutics for Equine Gastric Ulcer Syndrome. *Veterinary Clinics NA: Equine Practice* 33(1), 141 - 162
 11. Raidal, S. L., Andrews, F.M., Nielsen, S.G., Trope, G. (2017) Pharmacokinetic and pharmacodynamic effects of two omeprazole formulations on stomach pH and gastric ulcer scores. *Equine Vet J* 49(6):802-809.
 12. Andrews, F.M., Larson, C., Harris P. (2017) Nutritional management of gastric ulceration. *Equine Vet Educ.* 29(1);45-55.
 13. Andrews, F. M., Camacho-Luna, P., Loftin, P. G., Gaymon, G., Garza, Jr., F., Keowen, M. L., Kearney, M. T. (2016). Effects of a Pelleted Supplement (SmartGut Ultra) on non-glandular gastric ulcer scores and gastric juice pH. *Equine Veterinary Education* 4, 196-202.
 14. Polle, F., Andrews, F. M., Gillon, T., Eades, S. C., McConnico, R. S., Strain, G. M., Valberg, S. J., Guo, L. T., Shelton, G. D. (2014). Suspected congenital centronuclear myopathy in an Arabian-cross foal. *Journal of Veterinary Internal Medicine*, 6, 1886-1891.
 15. Woodward, M. C., Huff, N., Garza, Jr., F., Keowen, M. L., Kearney, M. T., Andrews, F. M. (2014). Effect of pectin, lecithin, and antacid feed supplements (Egusin®) on gastric ulcer scores, gastric fluid pH and blood gas values in horses. *Biomedical Central (BMC) Veterinary Research*, 10(Suppl. 1), 8. www.biomedcentral.com/1746-6148/10/S1/S4
 16. Huff NK, Auer AD, Garza F, Keowen M, Kearney MT, McMullin RB, Andrews FM. (2012) Effect of sea buckthorn berries on gastric ulcer scores and gastric juice pH in horses. *Journal of Veterinary Internal Medicine*, 26(5), 1186-1191, 2012, www.wiley.com
 17. Stokes AM, Lavie NL, Keowen ML, Gaschen L, Gaschen FP, Andrews FM. (2012) Evaluation of a wireless ambulatory capsule (SmartPill®) to measure gastrointestinal tract pH, luminal pressure and temperature, and transit time in ponies. *Equine Veterinary Journal/Wiley-Blackwell*, 44(4), 482-486.
 18. Al Jassim RAM, McGowan CM, Andrews FM. (2007) Bacterial diversity and role of lactic acid in the pathogenesis of acid injury in the non-glandular region of the equine stomach. *Recent Advances in Animal Nutrition in Australia* 16:85-91.
 19. Andrews FM, Frank N, Sommardahl CS, et al. (2006) Effects of intravenously administered omeprazole on gastric juice pH and gastric ulcer score in adult horses. *Journal of Veterinary Internal Medicine* 20:1202-1206.
 20. Andrews FM, Buchanan BR, Smith SH, et al. (2006) In vitro effects of hydrochloric acid and various concentrations of acetic, propionic, butyric and valeric acids on bioelectric properties of equine gastric squamous mucosa. *Am J Vet Res.* 67:1873-1882.
 21. Frank N, Andrews FM, Elliott S, et al. (2005) The effect of dietary oils of development of gastric ulcers in horses. *American Journal of Veterinary Research* 66:2006-2011.
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22. Buchanan, B.R. and Andrews, F.M. Treatment and prevention of equine gastric ulcer syndrome. (2003) *Veterinary Clinics N. A.: Equine Practice*. 19(3), 575 – 597.
23. Andrews FM, Reinemeyer CR, McCracken MD, et al. (2002) Comparison of endoscopic, necropsy, and histology scoring of equine gastric ulcers. *Equine Veterinary Journal* 34(5):475-478.
24. Nadeau JA, Andrews FM, Matthew A, et al. (2000) Evaluation of diet as a cause of gastric ulcers in horses. *American Journal of Veterinary Research* 61(7):784-790.
25. Andrews FM, Sifferman R, Bernard W, et al. (1999) Efficacy of omeprazole paste in the treatment and prevention of gastric ulcers in horses. *Equine Vet J Suppl.* 29:81-86.
26. Sandin A, Andrews FM, Nadeau JA, Doherty TJ, Nilsson G. (1999) Effects of intramuscular omeprazole on gastric acid secretion in horses over a twenty- four hour period. *Equine Veterinary Journal Suppl.* 29:50-53.
27. Daurio CP, Holste JE, Andrews FM, et al. (1999) 24-hour effect of omeprazole paste on gastric acid secretion in horses. *Equine Veterinary Journal Suppl.* 29:59-62.
28. Andrews FM, Nadeau J. (1999) Clinical syndromes of gastric ulceration in foals and adult horses. *Equine Veterinary Journal Suppl.* 29:30-33.

D. Research Support

Andrews, F. M. Pivotal Study: A 2-Treatment 3-Sequence 3-Period Partially Replicated Crossover (including RSABE Analysis) Bioequivalence Study with GastroGard® Formulation Versus Generic Formulation in Horses, Randlab Pty, Ltd., 7/85 Alfred Road, Chipping Norton, NSW, Australia 2170, \$280,000, September 2020 – Present 2022. (PI)

Andrews, F. M., Leise B. S., St. Blanc, M., Mirza, M., Riggs L. M. A Multi-Center Study to Evaluate the Effectiveness and Field Safety of Hyaluronate Sodium (HY-50) for the Control of Clinical Signs Associated with Osteoarthritis in Horses. Dechra, Inc. January 2018-Present. \$55,000

Comparison of the gastric microbiome in horses with and without EGGD (field study). Banse H, Paul L*, Andrews F, Ericsson A. Boehringer Ingelheim Animal Health, 2019. Budget: \$64,647 USD. (CoI)

Impact of phenylbutazone and phenylbutazone plus omeprazole on the gastric microbiome of horses. Paul L*, Banse H, Andrews F, Ericsson A. EHSP Charles V. Cusimano Research Grants (LSU SVM), 2019. Budget: \$4,600 USD. (CoI)

Comparison of the gastric microbiome in horses with and without equine glandular gastric disease (EGGD). Paul L*, Banse H, Andrews F, Ericsson A. EHSP Charles V. Cusimano Research Grants (LSU SVM), 2018. Budget: \$5,000 USD. (CoI)

Impact of concurrent treatment with omeprazole on phenylbutazone-induced gastric ulceration in horses. Banse H, Chapman A, Andrews F. EHSP Charles V. Cusimano Research Grants (LSU SVM), 2018. Budget: \$10,000 USD. (CoI)

Characterization of inflammatory cell infiltrate in equine glandular gastric disease (EGGD) Banse H, Andrews F, Watanabe T*, Del Piero F. USDA 1433 (LSU SVM), 2018. Budget: \$7,000 USD. (CoI)

Andrews, F. M. Gastroscopy Instructional Video, Randlab Pty, Ltd., 7/85 Alfred Road, Chipping Norton, NSW, Australia 2170, \$10,300.00, December 1, 2016 - February 28, 2017. (PI)

Andrews, F. M. Pivotal Study: A 2-Period Crossover Bioequivalence Study Comparing Gastrogard Paste Formulation of Omeprazole (NADA 141-123) Versus a Generic

Omeprazole Formulation when Administered Orally in Horses, Randlab Pty, Ltd., 7/85 Alfred Road, Chipping Norton, NSW, Australia 2170, \$159,703.00, September 30, 2016 - June 30, 2017. (PI)

Andrews, F. M., Riggs, L.M., Lopez M. " Effect of an Oral Supplement Containing Curcumin Extract (Longvida) on Lameness due to Osteoarthritis or Degenerative Disease and Gastric Ulcer Scores" Sponsored by W.F. Young Company, Private, (June 15, 2016 – June 14, 2017). \$161,131.00. (PI)

Andrews, F. M., Chapman, A. " Efficacy & Safety Field Study of Inhaled Ciclesonide for Horses with Recurrent Airway Obstruction (RAO) and /or Summer Pasture Associated Obstructive Pulmonary Disease (SPAOPD)" Sponsored by Boehringer Ingelheim Vetmedica, Private, (June 15, 2016 – June 14, 2017). \$55,000.00 (PI).
