

Investing in Clinical Advances Through Support of Seven Emerging Researchers

October 26, 2021 - The Foundation for the Horse today announced the award of \$131,717 for seven exceptional equine research projects being investigated by AAEP-member graduate students, residents, or postdoctoral fellows. Since inception of the program in 2019, The Foundation has provided \$326,398 in support of impactful equine research by up-and-coming investigators.

The supported research projects with researcher names and brief summaries follow:



Elucidating host-pathogen interactions during equine placentitis

Dr. Machteld van Heule, University of California, Davis

Generating data that enables identification of important placental genes and pathways involved in survival and pathogenesis of the pathogen and the host immune response will allow for improved treatment of placentitis and identification of new biomarkers that can facilitate an early diagnosis.

Investigation of genetic component of pergolide efficacy & adverse effects in horses undergoing treatment for pituitary pars intermedia dysfunction

Dr. Lauren Hughes, University of Minnesota

Establishing which putative alleles involved in the selected candidate genes are associated with adverse effects or varying efficacy of pergolide therapy may increase veterinarians' ability to appropriately treat this condition while expanding current knowledge on pathophysiology of PPID.





Direct and indirect effects of platelet rich plasma on neutrophil stimulation

Dr. Sarah Kooy, Auburn University (Funded thanks to the Thoroughbred Education and Research Foundation)

Observing differences in neutrophil proliferation and function with direct and indirect treatment of PRP will likely further strengthen the need for practitioners to use pure (leukocyte reduced) PRP for enhanced repair of musculoskeletal injuries, which is important to minimize reinjury and protect continued athletic performance.



An mRNA Vaccine to Immunize Foals Against Rhodococcus equi

Dr. Rebecca Legere, Texas A&M University

Identifying a construct of in vitro-transcribed mRNA encoding virulenceassociated protein A that yields strong protein expression and secretion in vitro, and demonstrating that nebulized IVT mRNA encoding VapA produces significantly greater antibody activity and cell-mediated immune responses than does intramuscular immunization with adjuvanted, purified VapA protein, will provide compelling evidence to evaluate the nebulized IVT mRNA VapA vaccine to protect foals against infection with R. equi.

Evaluation of persistence of chondrocytes or mesenchymal stromal cells after intra-articular injection

Dr. Bethany Liebig, Colorado State University

Determining whether culture-expanded chondrocytes will remain viable in the joint significantly longer than MSCs after intra-articular injection as measured through IVIS imaging, which could improve upon the use of MSCs to treat osteoarthritis.





Validation of chorionic girdle organoid culture as an invitro source of equine chorionic gonadotropin

Dr. Riley Thompson, Colorado State University

Providing the first long-term, physiologically representative in vitro model of the equine chorionic gonadotropin will be pivotal for studying regulation of trophoblast differentiation and early pregnancy maintenance in the mare while also yielding the potential for large-scale in vitro production of eCG.

Equine placenta in lab: development of equine placental organoid

Dr. Margo Verstraete, University of California, Davis

Establishing a protocol to generate equine trophoblast organoids from fresh post-partum placental samples for use as in vitro models to study placental development and its associated pathologies.



"We thank all donors who have supported The Foundation for the Horse and our growing equine research initiatives, especially the Thoroughbred Education and Research Foundation for their funding and collaborative support of Dr. Kooy's project," said Dr. Anthony Blikslager, Foundation Advisory Council Research Subcommittee chairman.

Equine research is one of three pillars of impact—along with education and horses at risk—supported by The Foundation. The 2022 application window for this research grant program will open early next year. To learn more, visit https://tinyurl.com/ffthgsrrg.