

**Equine Research Committee
2019 Convention
Fort Worth, Texas**

Mister President, the Equine Research Committee makes the following recommendations:

1. To approve the following proposals, as amended, for funding in the amount of \$209,495.17:

"Evaluation of Single Dose Misoprostol for Reducing Effects of Endotoxemia in Adult Horses" at Auburn University in the amount of \$19,974

Young Investigator Award: Shune Kimura DVM

Endotoxemia is caused by bacteria releasing endotoxin into the bloodstream and occurs secondary to a number of different disease processes in the horse. Endotoxemia can trigger a severe inflammatory condition and as such is associated with higher treatment costs and poorer survival due to complications such as laminitis (founder), colic, multi-organ failure, and death. The objective of this study is to demonstrate misoprostol's ability to combat inflammation associated with endotoxemia.

"Metabolite Profiles of Tendons and Ligaments in Equine Patients" at Colorado State University in the amount of \$19,885.17

Young Investigator Award: Katie Ellis DVM

Tendon and ligament injuries are a common cause of loss of work in the equine athlete. While differences in the biomechanical function of each tendon and ligament (energy storing vs. positional) explain some of this predisposition to injury, a direct correlation has not been identified. The objective of the current study is to compare the metabolic profile of commonly injured tendons and ligaments in the forelimbs and hindlimbs of normal horses. Comparing the differences between commonly injured tendons and ligaments will help determine if metabolic predisposition exists, for proactive targeting to prevent injury.

"Influence of Circle Size and Speed on Forces Experienced by Exercising Horses" at the Michigan State University in the amount of \$19,992

Young Investigator Award: Alyssa Logan

Skeletal injuries are a major problem in performance horses – impacting animal welfare, putting riders at risk, and causing huge economic losses. This laboratory has successfully found approaches to improve skeletal strength through management and training and has been working on similar approaches to minimize unsoundness issues associated with joint issues. This study aims to document alterations in loading force associated with circular exercise and the influence that circle size and speed of exercise have on those forces. The results from this study should prove beneficial in improving their welfare and longevity of performance horses, while reducing economic losses.

“Impact of Cryopreservation on Distribution of IZUM01 in Stallion Spermatozoa” at Texas A&M University in the amount of \$12,541

Young Investigator Award: Dale Kelley DVM, PhD

Use of frozen-thawed semen is associated with reduced pregnancy rates in mares. Several factors have been implicated in this decreased fertility, such as loss of sperm motility, chromatin and IZUM01 which is a membrane protein required for fertilization. The purpose of the proposed studies is to define the distribution of IZUM01 on equine sperm, and evaluate how it changes after freezing. This information will contribute to the long-term goal of developing methods for optimizing fertility of frozen-thawed stallion sperm.

“Entry and Modulation of Signaling Pathways of Macrophages by *Rhodococcus equi*” at Texas A&M University in the amount of \$57,067

Principal Investigator: Angela Bordin PhD

Pneumonia caused by a bacterium called *Rhodococcus equi* (*R. equi*) is an important cause of illness and death in foals, and the impact of *R. equi* pneumonia on the equine industry is large. In the United States, respiratory illness is the 3rd most common cause of disease in young foals, and the second leading cause of death in foals. The information gathered from this project will give us the understanding needed to develop approaches to stimulate immune responses in foals to prevent *R. equi*.

“Field Evaluation of a Rapid, Mobile, Novel Sequencing Technology for the Detection of Equine Herpesvirus-1 in Equine Nasal Secretions” at Virginia-Maryland College of Veterinary Medicine in the amount of \$80,036

Principal Investigator: Kevin Lahmers DVM, PhD

Effective management is key to limiting the impact of EHV-1 on horse health and industry, as it is ubiquitous in horse populations. Test results for current detection methods, such as PCR and virus isolation, can take multiple days before they become available. A novel DNA sequencing technology offers a new tool to rapidly detect and differentiate EHV-1 (i.e., neurotropic and non-neurotropic strains) as a stall-side diagnostic and in field applications. This study may have a direct impact on outbreak management by providing an avenue for more accurate and efficient decision-making – ultimately reducing the impact this disease may have on horses, equine facilities, and the equine industry

2. To elect Dr. Jason Bruemmer as Chair.

On behalf of the Equine Research Committee, I move that the Membership support these recommendations and recommend approval to the Board of Directors.

Dr. Bob Coleman, Chair