

Memorandum

To: USEA Board of Governors

From: Katherine Cooper, Chair, Equine Medical Research Committee

Date: July 31, 2017

Re: Distribution of 2016 Starter Fees

The Equine Medical Research Committee met to discuss the distribution of \$46,900, which represents the current balance of the Fund raised from 2016 starter fees and donations. The EMRC was created several years ago in an effort to make a dent in the woefully low funding that exists for equine medical research. The USEA has donated funds via the Morris Animal Foundation, which is a major funder of equine medical research. Morris has a robust network of equine veterinarians who review studies, track developments in the research world, and monitor the studies that they fund. They provide our committee with a list of those studies, and the EMRC reviews the studies and recommends to the USEA Board of Governors which studies the USEA EMRC funds should support. Through this partnership, we are helping address this major problem while maintaining control of where our members' money goes.

This year, the committee maintained the same philosophy as in the past – to select a variety of studies that benefit horses in general, that benefit sport horses and that will provide USEA with good “PR” by funding various institutions and showing our support for horse care and welfare. There were no requests from USEA research projects (such as the USEA Cardiovascular Study).

The following five studies are recommended for funding this year. The EMRC requests that the Board of Governors approve the donation of the EMRC Funds as follows:

D17EQ-822: Creating a New Tool to Study Wound Healing

Scientific Title: Ex vivo Modeling of Exuberant Granulation Tissue (EGT) Injury in Horses

John Peroni, DVM, The University of Georgia Study Cost: \$10,800

Summary: Researchers will develop a novel model to study limb wound healing and skin healing complications in horses.

Description: Superficial leg wounds, especially below the knee, are common in horses. The healing process can be lengthy and often is complicated by the formation of exuberant granulation tissue (EGT), also known as “proud flesh.” EGT is characterized by excessive tissue growth that impedes skin healing and can lead to extensive scarring, discomfort and even chronic lameness. Although EGT is a common problem, little is known about the cellular biology of equine skin. Researchers will develop an EGT model using equine skin explants grown under laboratory culture conditions. This new model will help researchers study wound healing and develop therapies to treat affected horses.

The EMRC recommends fully funding this study in the amount of \$10,800

D17EQ-818: Filling in Gaps in the Horse Genome Related to Tendon Health

Scientific Title: Decoding Equine Tendon Transcriptomes to Understand Tendon Growth, Maturation, and Aging Michael Mienaltowski, DVM, PhD, University of California, Davis Study Cost: \$10,800

Summary: Researchers will fill in missing information in the horse genome associated with tendon health and aging.

Description: Tendon diseases often result in severe lameness and debilitation for horses. Although the equine genome was released in 2007, major informational gaps still exist, slowing the discovery of new

treatments and therapies. Using new sequencing technologies, researchers will identify previously unrecognized tendon-specific and tendon-associated genes. This study will provide for a more robust equine genome, will improve our understanding of tendon aging in horses, and will help advance the development of treatments for life-limiting lameness in horses.

The EMRC recommends fully funding this study in the amount of \$10,800.

D17EQ-304: Managing the Spread of Salmonella

Scientific Title: How Long Will My Horse Shed Salmonella?

Brandy Burgess, DVM, PhD, The University of Georgia Study Cost: \$106,793

Summary: Researchers will determine how long infected horses shed Salmonella in their feces and use this new information to improve infection prevention and control.

Description: Salmonella is one of the most common bacterial diseases of adult horses. Infection can occur via contamination of the environment, feed or water, or by contact with animals actively shedding the bacteria. Researchers will collect critical data on Salmonella shedding in affected horses, determine factors that may contribute to the duration of shedding, and record adverse health effects on stablemates. This critical new information will help researchers develop sound, evidence-based infection control practices to protect horses as well as their owners who also are at risk of contracting Salmonella.

The EMRC recommends donating \$10,000 to this study.

D17EQ-029: Investigating a New Treatment Strategy for Equine Asthma

Scientific Title: The MARCKS Protein is a Novel Therapeutic Target for Treatment of Equine Asthma

Mary K. Sheats, DVM, PhD, North Carolina State University Study Cost: \$126,358

Summary: Researchers will investigate a promising new treatment target for equine asthma.

Description: Equine asthma (also previously known as heaves, recurrent airway obstruction and COPD) is a significant problem with limited treatment options. This chronic allergic respiratory condition is diagnosed in all breeds and reportedly affects between 10 and 20 percent of adult horses. Common symptoms include recurrent cough, labored breathing and exercise intolerance. Researchers noted increased levels of a specific protein in airway samples of horses with asthma when compared to healthy horses. In this study, the team will investigate if targeting this novel protein is a viable new therapeutic strategy to treat equine asthma.

The EMRC recommends donating \$10,000 to this study.

D17EQ-021: Improving Regenerative Therapies

Scientific Title: Platelet Lysate as a Novel Serum-Free Medium for the Culture of Equine Bone-Marrow Derived Mesenchymal Stem Cells

John F. Peroni, DVM, The University of Georgia Study Cost: \$115,752

Summary: Researchers will evaluate a new culture technique to grow stem cells less likely to be rejected by the patient during treatment.

Description: Mesenchymal stem cells (MSC) can differentiate into many different types of cells, such as skeletal and nerve tissue. Most regenerative therapies involving MSC rely on fetal bovine serum (FBS) to help grow and develop these cells. However, FBS can stimulate an unwanted immune response which may affect MSCs' survival and function when administered to a patient. Researchers will evaluate an alternate medium derived from clot-producing platelets and its ability to support the growth of MSCs for regenerative therapies. The team hopes this new method will generate stem cells more immunologically neutral to the patient, resulting in a better response to stem cell therapies.

The EMRC recommends donating \$5,300 to fund this study.