



## Grayson-Jockey Club Research Foundation Funded Projects

The board of directors of Grayson-Jockey Club Research Foundation has authorized expenditure of \$1,389,637 to fund 17 new projects at 13 universities, four continuing projects, and the Storm Cat Career Development Award. The 2020 slate of research brings Grayson-Jockey Club Research Foundation's totals since 1983 to more than \$28.8 million to underwrite 383 projects at 45 universities.

### NEW PROJECTS

#### **Passive Immunization Of Foals With RNA-AB Against R Equi**

*Jeroen Pollet, Baylor College Of Medicine*

By inhalation therapy, we intend to deliver the genetic code for a protective antibody against rhodococcus equi into the lung cells of newborn foals, to rapidly protect them against infection.

#### **Improving Fungal Diagnosis In Horses**

*Soon Hon Cheong, Cornell University*

Developing a diagnostic test that can rapidly detect, identify, and determine the antifungal susceptibility profile of clinical equine samples to improve treatment outcomes of fungal infection in horses.

#### **Bisphosphonates And Fatal Musculoskeletal Injury**

*Heidi Reesink, Cornell University*

Determining the prevalence of bisphosphonate use in racehorses and whether bisphosphonates are associated with fatal musculoskeletal injury is essential to equine welfare and the future of racing.

#### **Novel Treatment For Recurrent Exertional Rhabdomyolysis**

*Stephanie Valberg, Michigan State University*

Determining if a potent antioxidant coenzyme q10, not subject to withdrawal times, can benefit horses with tying up by replenishing diminished muscle coq10 levels and decreasing oxidative stress.

#### **Enhancing The Efficacy Of MSCs For Tendon Healing**

*Lauren Schnabel, North Carolina State University*

This proposal examines the tendon inflammatory environment following acute injury and the effect of such an environment on mesenchymal stem cells (MSCs), with the goal of improving MSC treatment efficacy.

#### **AMPK Agonist Combination Therapy & ID In Horses**

*Teresa Burns, The Ohio State University*

By completing this work, we hope to characterize a combination therapy to improve equine insulin resistance that is administered orally and well tolerated.

#### **SDFT Adaptation In Thoroughbred Racehorses**

*Sushmitha Durgam, The Ohio State University*

The impact of training and racing on (mal)adaptations in superficial digital flexor tendon hierarchical structure will be evaluated to delineate the pathophysiology of this common injury in racehorses.

#### **Dynamics Of Vitamin D In Hospital Foals**

*Ramiro Toribio, The Ohio State University*

Critically ill foals often have low blood levels of vitamin D; our goal is to investigate if their levels over time are associated with the severity of their disease and mortality.

#### **Asthma, Performance And Omega-3s In Racing Thoroughbreds**

*Laurent Couetil, Purdue University*

Investigating the variability of asthma severity in horses racing across the us, its effect on performance and determine if omega-3 pufa supplementation is beneficial.

#### **Anti-Pnag Plasma For Preventing R. Equi Foal Pneumonia**

*Noah Cohen, Texas A&M University*

Transfusion of plasma is the only licensed product for preventing rhodococcus equi pneumonia, and demonstrate that we have developed a plasma product superior to that available currently.

#### **Effect Of Nebulized Lidocaine In Treating Equine Asthma**

*Melissa Mazan, Tufts University*

Evaluating the efficacy of inhaled lidocaine in equine asthma in reducing airway inflammation and hyper-responsiveness by promoting an anti-inflammatory lung environment.

#### **Effect Of NSAIDs On Anion Transport In The Equine Colon**

*David Freeman, University of Florida*

This proposal is designed to improve management of horses with right dorsal colitis, an insidious life-threatening form of colic for which all horses on phenylbutazone are at risk.

### **Protein Based In Vivo Diagnostic For Endometrial Biofilm**

*Mats Troedsson, University Of Kentucky*

Successful management of bacterial biofilms in the uterus requires an accurate diagnostic in vivo assay that we propose to develop.

### **Novel Delivery Of Antimicrobials Into Equine Joint**

*Simon Bailey, University of Melbourne*

The development and testing of, a novel (gel) carrier formulation for the antibiotic Cefuroxime, injection into horses' joints for application as a treatment of joint infections.

### **Diagnostic Assay For Recurrent Exertional Rhabdomyolysis**

*Molly McCue,*

Sponsored by 

*University Of Minnesota*

Identify a comprehensive set of genetic markers that allow RER risk prediction before horses tie-up and preemptive management to decrease the frequency and severity of clinical disease.

### **Inhibiting EHV-1 With Anti-Inflammatory Drugs**

*Arthur Frampton, University Of N.Carolina Wilmington*

Using a tissue culture model system to test the ability of specific drugs to reduce the damaging hyper-inflammatory response that is observed in EHV-1 infected horses suffering from equine herpesvirus myeloencephalopathy (EHM).

### **Nocardioform Placentitis**

*University Of Kentucky*

Sample collection and storage of tissue for future research and testing for nocardioform placentitis.

### **CONTINUING PROJECTS**

#### **Training Programs For Prevention Of Fetlock Injury**

*Sue Stover,*

Sponsored by



*University of California-Davis*

Predicting proximal sesamoid bone fracture in racehorses from a calibrated computational model that incorporates training programs, track surface properties, and bone's reparative processes.

#### **Antimicrobial Properties Of Equine MSCS**

*Laurie Goodrich, Colorado State University*

This study is expected to impact the equine industry by validating TLR activated equine mesenchymal stem cells as an effective, novel therapy in treating multi-drug resistant infections.

#### **Robotic CT For Assessing Of Bone Morphology**

*Kyla Ortved,*

Sponsored by



*University of Pennsylvania*

Preventing catastrophic injuries in the Thoroughbred racehorse: screening fetlock joints using standing robotic CT and biomarker analysis.

#### **Non-Invasive Evaluation Of Host-Microbiota Interactions**

*Canaan Whitfield-Cargile, Texas A&M*

This study aims to develop a non-invasive platform to serve as a diagnostic test for gastrointestinal inflammation prior to severe disease and to reveal how bacteria in the gut influence horse health.