

## Grayson-Jockey Club Research Foundation 2019 Funded Projects

The 2019 allotment of \$1,338,858 will fund eight new projects at seven universities, nine continuing projects, and three career development awards. The 2019 slate of research brings Grayson-Jockey Club Research Foundation's totals since 1983 to more than \$27.5 million to underwrite 366 projects at 44 universities.

### NEW PROJECTS

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

*Sue Stover, University of California-Davis*

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

#### **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.

#### **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.

#### **Intrauterine Antibiotics May Augment Placentitis Therapy**

*Christopher Bailey, North Carolina State University*

This proposal will explore the potential for intrauterine antibiotic treatment to improve foal survival and health in mares with ascending placentitis.

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

*Kyla Ortved, University of Pennsylvania*



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

#### **Uncovering The Blood B Cell Immune Response To EHV-1**

*Tracy Stokol, Cornell University*

By sequencing individual blood B cells, we will identify changes in B cell immunity after EHV-1 vaccination and will generate a sequencing database that will uncover new antibodies against EHV-1.

#### **Racehorse Stride Characteristics| Injury And Performance**

*Chris Whitton, University of Melbourne*

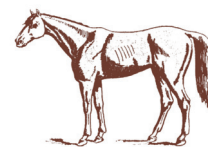


By identifying changes in stride characteristics of racehorses over time we can identify those parameters that can be used as an early indicator of injury or that are key to injury development.

#### **Standing Pet Of The Racehorse Fetlock**

*Matthew Spriet, University of California-Davis*

Validation of a PET technology for early detection of fetlock lesions in standing horses to prevent catastrophic breakdowns in racehorses.



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## CONTINUING PROJECTS

### **Host-directed Control of R. equi Foal Pneumonia- Part II**

*Angela Bordin, Texas A&M University*

We propose to use an inhaled product applied directly into the lungs to increase immune responses to protect foals against *Rhodococcus equi*, a bacterium that causes severe pneumonia in foals

### **Thoroughbred Sales Radiology-Ultrasonography Study**

*C. Wayne McIlwraith, Colorado State University*

This study will improve the industry's understanding of the significance of sesamoiditis, ultrasonographic suspensory branch changes, and stifle lucencies in sales yearlings and 2-year-olds.

### **Effects Of Low-Dust Forage On Lung Health Of Athletic Horses**

*Laurent Couetil, Purdue University*

This proposal seeks to provide a non-pharmaceutical solution to the widespread problem of equine asthma by evaluating the benefits of low-dust forage for horses engaged in athletic activity.

### **Investigating Metabolic Stress And Viral Hepatitis**

*Sabine Mann, Cornell University*

We will study metabolic pathways and hepatic viral infection to find a relationship with maladaptation to training syndrome/high GGT to help improve the health and performance of race-horses.

### **Ampk Agonists And Insulin Dysregulation In Horses**

*Teresa Burns, The Ohio State University*

This project directly impacts the treatment of equine metabolic syndrome by assessing the efficacy of two drugs, metformin and acetylsalicylic acid, in the treatment of equine insulin dysregulation.

### **Host Factors Involved In EHM Pathogenesis And Latency**

*Gisela Soboll Hussey, Michigan State University*

The development of tools to protect horses from EHV-1 infection, compare the immune responses in old and young horses to identify the mechanisms causing clinical EHM.

### **Unraveling Complex Traits By Defining Genome Function 2**

*Carrie Finno, University of California-Davis*

Developing an atlas of gene regulation in the horse.

### **Development Of Limited View 3D Imaging**

*Chris Kawcak, Colorado State University*

The goal of this proposal is to develop a point-of-care, 3-dimensional imaging technique that can be used to better characterize and prevent injuries in racehorses.

### **Epidemiology Of Drug-Resistant R. Equi At Horse Farms**

*Kelsey Hart, University of Georgia*

We will determine if isolates of *Rhodococcus equi* highly resistant to antibiotics are widespread at horse breeding farms in Kentucky.