



2022 FUNDING FOR EQUINE RESEARCH

The board of directors of Grayson-Jockey Club Research Foundation announced that it has authorized expenditure of \$1,661,180 to fund 15 new projects and 10 continuing projects at 16 universities as well as three career development awards. The 2022 slate of research brings Grayson’s totals since 1983 to more than \$32.1 million to underwrite 412 projects at 45 universities.

“Grayson aims to support projects that address a wide range of equine health issues, and this diversity can be seen in our approved projects this year,” said Jamie Haydon, president of the foundation. “We are not able to fund these research projects and career development awards without the generosity of our donors, and we are grateful to them for recognizing the importance of equine veterinary research.”

Grayson is pleased to fund the following projects in 2022.

Since 1983

412 Projects



45 Institutions

32.1 Million




NEW PROJECTS IN 2022

Persistence Of Antimicrobial Resistance In Horse Farms

Laura Huber, Auburn University

This project will determine the effect of antimicrobial pressure on multidrug-resistant -R. equi persistence in the soil of horse breeding farms in a 5 year period.



Evaluating EVs From Equine Fetally-Derived MSCS

Fiona Hollinsbead, Colorado State University

This project will be evaluating extracellular vesicles (EVs) from equine fetally-derived mesenchymal stem cells as an endometritis therapeutic.

Development Of A Palmar Osteochondral Disease Model

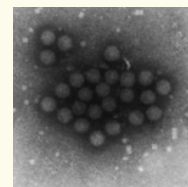
Chris Kawcak, Colorado State University

The goal of this proposal is to develop an experimental model of palmar osteochondral disease in horses to better study disease progression and facilitate development of improved treatment strategies.

Development Of A Vectored Vaccine To Equine Rotavirus A

Mariano Carossino, Louisiana State University

A novel viral vectored vaccine against equine rotavirus (A G3 and G14), the leading cause of foal diarrhea, will be designed and evaluated in mares and a neonatal mouse model as proof-of-concept.



Immunomodulation And Exosomes To Enhance Tendon Healing

Sushmitha Durgam, The Ohio State University

This study aims to characterize M1 and M2 macrophage-derived inflammatory factors and assess their impact on superficial digital flexor tendon tenocyte activities while examining the potential of extracellular vesicles/exosomes to enhance tendon healing.



Pharmacokinetics Of Oral Mycophenolate Mofetil In Horses

Gwendolen Lorch, The Ohio State University

This proposal will evaluate the pharmacokinetics of orally administered mycophenolate mofetil as a safe, effective and inexpensive immunosuppressant drug for management of equine immune-mediated disease.

Novel Strangles Vaccine Using CD 40-Targeted Delivery

Luc Berghman, Texas A&M University

This project will be targeting bacterial components of *Streptococcus equi* spp. *equi* to the horse's immune surveillance cells (the APCs) that will result in a fast and strong immune response that will protect against strangles.



Trained Immunity In Foals

Angela Bordin, Texas A&M University

This project will study how giving oral live bacteria protects foals against infection by *Rhodococcus equi*, the cause of severe and debilitating pneumonia in foals, for future development of a vaccine.

Immunogenicity In Foals Of An mRNA Vaccine For R. Equi

Noah Cohen, Texas A&M University

This study proposes to develop an mRNA vaccine delivered by inhalation to protect foals against pneumonia caused by *Rhodococcus equi*.

Does Antibiotic Treatment Change The Microbial Resistome

Paul Morley, Texas A&M University

This research will compare four antibiotic treatments to these protocols that can be selected to treat bacterial infections while also lessening the risks for promoting antibiotic resistance.

Equine Placentitis: New Approaches To An Old Problem

Pouya Dini, University of California Davis

The goal of this study is to identify pathogens involved in placentitis and investigate their interaction with the placenta using bioinformatics and in vitro studies to develop better diagnostic and treatment methods.

Motion Of The Proximal Sesamoid Bones On Uneven Footing

Susan Stover, University of California Davis

This study proposes to determine how hoof conformation, shoeing, and uneven racetrack surfaces could contribute to fetlock breakdowns.



Influence Of Vitamin D And Cortisol In R. Equi Infection

Kelsey Hart, University of Georgia

This study will investigate how blood levels of cortisol and vitamin D are related to the development and progression of *Rhodococcus equi* pneumonia in foals after natural exposure.

Fentanyl Matrix Patches In Horses

Rachel Reed, University of Georgia

The aim is to show that fentanyl administered via patches placed on the skin is well absorbed and represents a promising means of providing clinically relevant continuous pain relief to horses.

Sirolimus For The Control Of Insulin Dysregulation

Andrew Van Eps, University of Pennsylvania

This study will evaluate the drug sirolimus (a potent suppressor of insulin production) for the treatment of insulin dysregulation (the most important cause of laminitis) in horses.

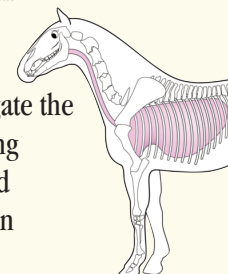


SECOND-YEAR PROJECTS

Asthma, Performance And Omega-3s In Racing Thoroughbreds

Laurent Couetil, Purdue University

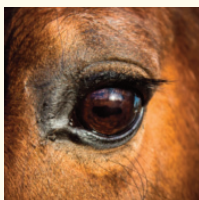
The main purpose of the study is to investigate the variability of asthma severity in horses racing across the US, its effect on performance and determine if omega-3 PUFA supplementation is beneficial.



Mitigation Of Equine Recurrent Uveitis Through SOCs

Joseph Larkin, University Of Florida

This project seeks to design a topical eye drop, using a natural protein, which helps to prevent pain and blindness associated with equine recurrent uveitis.



Environmental Origins Of Equine Antimicrobial Resistance

Brandy Burgess, University Of Georgia

This study will elucidate how antimicrobial resistance and virulence determinants are shared among horses and hospital environment, as well as the role antimicrobial exposure plays at this interface.

Treatment Of Joint Injury With Mesenchymal Stromal Cells

Thomas Koch, University Of Guelph

This project deals with the evaluation of equine umbilical cord blood-derived mesenchymal stromal cells to treat joint injuries in horses.



Optimizing Bone Growth To Reduce Equine Fracture

Mariana Kersh, University Of Illinois Urbana-Champaign



Reduction in distal limb fractures through exercise in young horses would have a significant positive impact on horse welfare and the economics and public perception of the horse industry.

New Generation Equine Influenza Bivalent VLP Vaccine

Thomas Chambers, University Of Kentucky

This study is designed to create a novel, safe and effective vaccine for equine influenza based on the 21st-century technology of noninfectious virus-like particles produced in plants.

Injury Prediction From Stride Derived Racing Load

Cbris Whitton, University Of Melbourne

By studying patterns in bone fatigue accrual over time in racehorses, this project will help better, and earlier, identify horses at risk of limb injury, facilitating timely evidence based preventative strategies.

The above project is sponsored by



with additional funds from



Predicting Exercising Arrhythmias With Resting ECGs

Molly McCue, University Of Minnesota

This project will use at rest ECGs to identify horses with irregular heart rhythms at exercise that can cause sudden cardiac death (SCD), allowing for increased monitoring and improved understanding of SCD.

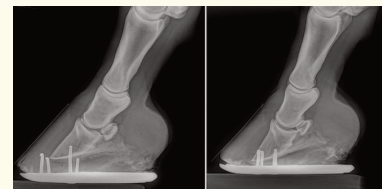
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Understanding And Preventing Supporting Limb Laminitis

Andrew Van Eps, University Of Pennsylvania

The aim of this study is to make supporting limb laminitis preventable through analysis of archived model tissues, a multi-center limb motion study of horses at risk, and development of a prototype therapeutic device.



Diagnosis Of Incipient Condylar Stress Fracture

Peter Muir, University Of Wisconsin-Madison

This study will save the lives of racehorses by establishing screening using fetlock CT for diagnosis of horses with a high risk of imminent serious injury for personalized clinical care.

sponsored by





CAREER DEVELOPMENT AWARDS

The 2022 career awards bring a total of 30 career awards by the foundation with more than 90% of recipients continuing in a research career.

The Storm Cat Career Development Award, inaugurated in 2006, is a \$20,000 grant in 2022 designed as an early boost to an individual considering a career in equine research. It has been underwritten annually by Mrs. Lucy Young Hamilton, a Grayson-Jockey Club Research Foundation board member whose family stood the retired champion stallion Storm Cat at Overbrook Farm. In 2022 there are two award recipients:

Rosemary Bayless

North Carolina State University,
mentor - Dr. Katie Sheats

Her project is titled, “Cell-Free DNA as a Biomarker in Equine Colic Patients.”



Sarah K. Shaffer

University of California-Davis,
mentor - Dr. Susan Stover

Her project is titled, “Linking Training to Stress-Reactions in Racehorse Bones.”

The Elaine and Bertram Klein Development Award is a competitive program intended to promote development of promising investigators by providing a one year salary supplement of \$20,000. This program is restricted to one award per year and is named in memory of a renowned horsewoman and her late husband, a Thoroughbred owner and breeder. The first grant was funded in 2015 for \$15,000 with a donation by the Klein family.

The 2022 award recipient is:

Bruno C. Menarim

Gluck Equine Research Center,
University of Kentucky,

mentor - Dr. James MacLeod
His project is titled, “PPAR-y Activation in the Treatment of Joint Inflammation.”



A. GARY LAVIN CHAIR

Grayson-Jockey Club Research Foundation has created an endowment to support a full-time position, the “A. Gary Lavin Chair,” in recognition of Dr. Gary Lavin’s contributions to the foundation and equine health. Dr. Lavin passed away at age 83 in February 2021.



“Dr. Lavin made innumerable contributions to Grayson over the last 40 years, including time spent as a valued member of both our board of directors and research advisory committee (RAC),” said Dell Hancock, chair of Grayson. “He was instrumental in the reorganization of our research approval process, which resulted in the development of the research advisory committee we use today. Dr. Lavin believed that the veterinary community should be involved in Grayson’s work, and we are proud to honor him with this position, which will facilitate a veterinary relationship with the foundation that he believed was so important.”

Those who are interested in supporting the endowment can designate donations to Grayson as being specifically for the A. Gary Lavin Chair position. You can also donate online.



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