



Grayson-Jockey Club Research Foundation

RESEARCH SPOTLIGHT

Spring Edition 2024

“We are very excited to support the announced research projects at Grayson.

Without Grayson, the future of our horse's health is at risk if we don't continue to make strides in equine research we, as an industry cannot continue to prosper.”

Board of Directors



2024 FUNDING FOR EQUINE RESEARCH

The board of directors of Grayson-Jockey Club Research Foundation announced that it has authorized expenditure of \$2,445,164 to fund 11 new projects and thirteen continuing projects at 14 universities as well as three career development awards. The 2024 slate of research brings Grayson's totals since 1940 has provided more than \$42.3 million to underwrite more than 437 projects at 48 universities. Grayson is proud to present all the projects currently being funded, with the new projects listed first and the second year projects following, all listed alphabetically by school.

NEW PROJECTS FOR 2024

Diet Nonstructural Carbohydrates Alter Ovarian Functions

Elaine Carnevale, Colorado State University

Feeding nonstructural carbohydrates (grains and sugars) to older mares can alter cell function and metabolism in ovarian follicles, impairing ovulation, oocyte and embryo viability, and fertility.

Equine Tendinopathy: Advanced Imaging and Tenex Efficacy

Brad Nelson, Colorado State University

This study will enhance our knowledge of equine tendon repair by comprehensive clinical imaging, while simultaneously assessing a novel tendon therapy, improving veterinary and industry understanding.

Shining a Light on the Black Box of Early Pregnancy Loss

Amanda de Mestre, Cornell University

This study will determine how common genetic disorders of the early equine embryo occur as well as identify how they present to veterinarians and key factors that increase their risk.

Ketodoxapram as a Treatment For Atrial Fibrillation

Annelies Decloedt, Ghent University

Ketodoxapram is a promising novel treatment method for horses with atrial fibrillation.

Adiponectin as a Clinical Biomarker For Laminitis Risk

Melody A de Laat, Queensland University of Technology

To improve early detection of the painful foot disease laminitis, this project will evaluate the value of a promising biomarker for the condition called adiponectin.

Role of C1q in Rhodococcal Infection

Angela Bordin, Texas A&M AgriLife Research

Examine the effects of complement in preventing *Rhodococcus equi* infection, a cause of severe pneumonia in foals, for future design of vaccines and more efficacious hyperimmune plasma products.

Novel Protein Targets for *R. equi* Serology and Vaccines

Noah Cohen, Texas A&M AgriLife Research

This study will use a novel method for the first systematic evaluation of a large number of proteins to identify targets for developing a simple blood test and vaccines for rhodococcal foal pneumonia.

Insulin Dysregulation: Placental Changes and Foal Health

Elaine Norton, University of Arizona

This study investigates the role of equine metabolic syndrome on placental function and foal health and metabolic outcomes in order to develop effective treatment and management regimens.



Novel Method for Diagnosis of Nocardioform Placentitis

Shavahn Loux, University of Kentucky

This project is designed to create a sensitive and specific diagnostic test for early detection of Nocardioform Placentitis.

Polyacrylamide for Joint Therapy– Critical Things Unknown

Bruno C. Menarim, University of Kentucky

Examining the osteoarthritis treatment, polyacrylamide hydrogel and how the treatment characterizes the changes in the inflammatory response within the joints.

Risk Assessment for Proximal

Sesamoid Bone Fracture

Peter Muir, University of Wisconsin–Madison

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

SECOND YEAR PROJECTS

Transcriptomic Response To Osteoarthritis

Lynn Pezzanite, Colorado State University

This study will highlight the role that cells of the immune system play to contributing to disease progression of osteoarthritis toward the goal of developing treatments for each stage of disease.

Efficacy of Recombinant Equine Lubricin for Osteoarthritis

Heidi Reesink, Cornell University

This study will assess efficacy of recombinant equine lubricin (rEqLub) in mitigating equine joint disease and identify gene and protein pathways affected by rEqLub in equine joints.

Treatment Of Meniscal Injury With Mesenchymal Stem Cells

Aimee Colbath, Cornell University

This study will determine whether intra-articular mesenchymal stem cells lead to improved meniscal healing, providing an immediate impact on how veterinarians treat equine meniscal disease.

Additional Funds Provided by  USFA

Stem Cell Neotissue Implants for Equine Tendon Healing

Mandi J. Lopez, Louisiana State University

This study will determine if viable neotissue implants generated from stem cells will augment current therapies to treat debilitating tendon injuries in equine athletes and companions.



Nanoparticle Vaccines for Equine Rotavirus B

Feng Li, University of Kentucky

The vaccine candidate developed from this project will help the equine industry to control and prevent equine rotavirus B infection in future foaling seasons.



Gallium Nitrate to Treat Bacterial Endometritis in Mares

Dale Kelley, Oklahoma State University

This study proposes to develop new, safe, and efficacious antimicrobial strategies to mitigate antimicrobial resistance.

An Efficacious EPM Vaccine is on the Way

Sharon Witonsky, Virginia Maryland CVM

This study plans to identify potential MHC class I CD8 and MHC class II CD4



A VapA mRNA Vaccine for R. equi Pneumonia

Noah Cohen, Texas A&M University

This grant evaluates an mRNA vaccine administered intramuscularly to foals to protect against pneumonia caused by the bacterium Rhodococcus equi, a major cause of disease and death in foals worldwide.

protective epitopes for an efficacious vaccine against EPM, due to Sarcocystis neurona.



Genomics of Thoroughbred Stallion Subfertility

Terje Raudsepp, Texas A&M University

The proposed project aims to identify candidate genes and regulatory variants underlying impaired acrosome reaction and subfertility in Thoroughbred stallions using multi-platform genomics.

EHV-1 PROJECTS



A Novel DNA Vaccine Platform To Control EHV-1 and EHV-4

Bettina Wagner, Cornell University

The goal of this project is to develop an effective DNA vaccine for equine herpesvirus to protect horses against infection and disease and to prevent EHV outbreaks in the US.

Validation of Biomarkers for Equine Neurodegeneration

Carrie J. Finno, University of California-Davis

It is expected that this study will improve the diagnosis of spinal cord disease in horses.



Use Of Nucleic Acid Vaccines To Protect From EHV-1/EHM

Gisela Soboll Hussey, Michigan State University

This proposal is to develop a novel mRNA-based equine herpesvirus (EHV) vaccine that protects horses from EHV-1 myeloencephalopathy and will also likely cross-protect against other equine herpesviruses.

Antibiotic Effects On Uterine Microbiome And Resistome

Igor Canisso, University of Illinois

This is a study of uterine microbiome and resistome of mares resistant and susceptible to endometritis treated with post-mating antibiotics.



CAREER DEVELOPMENT AWARDS

The 2024 career awards bring a total of 35 career awards by the foundation with more than 89% of recipients continuing in a research career.

The Storm Cat Career Development Award

Inaugurated in 2006, this \$20,000 grant is 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. We congratulate the 2024 recipient:

Rebecca Bishop

University of Illinois Urbana-Champaign

Faculty supervisors:

Dr. Annette McCoy and

Dr. Pamela Wilkins

“Multiomic Investigation of Peritoneal Fluid in Colic”



The Elaine and Bertram Klein Development Award

This 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.

We congratulate the 2024 recipient:

Rebecca Legere

Texas A & M University

Faculty supervisor:

Dr. Noah Cohen

“Passive Immunization Against

Rhodococcus equi Using MRNA”



Tribute to Nancy C. Kelly

In early 2024, Nancy C. Kelly passed away after an extended illness.

As the vice president of development for Grayson-Jockey Club Research

Foundation, Nancy helped raise millions of dollars for equine research.

She was also the executive director of The Jockey Club Safety Net Foundation, organizing countless fund-raising events ranging from golf tournaments and ladies' luncheons to formal gala dinners. In her honor, Grayson is funding a special Career Development Award in 2024.

We congratulate the recipient:



Lauren Hughes

University of Minnesota

Faculty supervisor:

Dr. Molly McCue

“Genetics of Pituitary Pars Intermedia Dysfunction Risk”



*Since 1940 Funding
More than \$42.3 million
More than 437 projects
At 48 Institutions Worldwide*



**Grayson-Jockey Club
Research Foundation**

grayson-jockeyclub.org

DONATE



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