One thing the Coronavirus is teaching us is the importance of research—research of all kinds—to the advancement of precaution and treatment.

This IS what Grayson does.

-Dell Hancock,
Chairman, Grayson-Jockey Club Research Foundation
NEW PROJECTS IN 2020

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 Mesenchymal Stem Cells 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 (5’ AMP-activated protein kinase enzyme)
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.

Superficial Digital Flexor Tendinitis 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 (Antibody to Poly-N-acetyl Glucosamine) 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 (Nonsteroidal anti-inflammatory drugs) 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.

Nocardioform Placentitis
University of Kentucky – One Year Grant
Sample collection and storage of tissue for future research and testing for nocardioform placentitis.

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, 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 (Equine Herpesvirus 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).

Training Programs For Prevention Of Fetlock Injury
Sue Stover, 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 Mesenchymal Stem Cells
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, 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.
I am deeply humbled and honored to be the 2020 recipient of the Storm Cat Career Development Award presented by the Grayson-Jockey Club Research Foundation. This award is special to me for so many reasons. Not everyone necessarily understood my desire to complete a PhD program following my residency and board-certification in Equine Sports Medicine & Rehabilitation. The reality is that orthopedic injuries we consistently see on the front lines of horse shows and then later in the rehabilitative setting inspire me to dig deeper and try to come up with better solutions for our equine athletes. My ultimate goal is to come at historic injuries with fresh perspective through translational orthopedic research that can eventually be used in the clinical setting - and it has certainly been a journey! I have a long way to go – but this is super cool.

Thank you Grayson-Jockey Club for the amazing support!

Sherry A. Johnson  
*Colorado State University*

Dr. Johnson completed her Sports Medicine and Rehabilitation Residency in conjunction with her Master’s Program and now is in the second year of her PhD program.

During Dr. Johnson’s residency she began her research in tendon disease by validating an optimized model of equine translational tendon injury that was found to simulate naturally occurring equine tendon disease. The study she performed is the most comprehensive longitudinal equine tendon healing investigation to date that simultaneously incorporated all of the clinically relevant non-invasive imaging modalities with histology, functional and bio-mechanical outcomes.

Dr. Johnson continued her research, which involved stepping back and looking at the use of a translational murine model of tendinopathy to explore and validate rehabilitation variable as a significant factor in tendon healing and return to function.

Through this initial grant, she is investigating the therapeutic role of exercise in tendon repair. Specifically, Dr. Johnson aims to develop tendon-sparing exercise prescriptions that may eventually be extrapolated to equine and human patients.

Her project, “Validation of Blood Flow Restriction Training in Horses,” continues her passion of researching soft tissue injury and rehabilitation. Dr. Johnson’s PhD is focusing on blood flow restriction (BFR) training.

**The Storm Cat Career Development Award**, inaugurated in 2006, is a $15,000 grant 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. Dr. Johnson is the 20th recipient of this award. The majority of past recipients have continued with a career in research, while three others are in private practice.