



FUNDING OVER \$1.4 MILLION ALLOTTED IN 2017 FOR RESEARCH PROJECTS

Grayson-Jockey Club Research Foundation's board of directors has approved a 2017 budget of \$1,483,542 to fund 11 new equine research projects, plus eight renewing two-year studies and two career development awards. The total is the highest ever provided in one year by the Foundation, which dates from the creation of the original Grayson Foundation in 1940.



As per GJCRF's established procedure, the funded science was evaluated as the best available projects by the Foundation's 32-person Research Advisory Committee (RAC), comprised of university researchers and race track and farm veterinarians. The Foundation had received 61 research proposals from university researchers across North America and 6 foreign countries. Projects are rated on potential impact on numerous horses, plus scientific method and budgetary efficiency. Grayson funds research aimed at fostering the health and soundness of horses of all breeds and uses.

"Funding by the GJCRF this year produced a balanced set of projects covering a broad set of problems, addressing laminitis, proof of efficacy of nutraceutical components, and two extremely pertinent grants dealing with the persistent problem of EHV 1 from different approaches," said Dr. Johnny Mac Smith, veterinary consultant for the Foundation.

"Additionally, Grayson is supporting further investigation of injuries in race horses at the University of Glasgow," added Dr. Steve Reed of Rood and Riddle who is the chairman of the RAC. "This project also has support from The Jockey Club and is an ongoing result of a plan

In this edition:

- 2017 Research Grants Announced
- Research Career Development Awards
- Leverett Miller Induction to POLO HOF

initiated at the first Welfare and Safety of the Racehorse Summit in 2006. It is identifying aspects of training and scheduling which produce additional risk of injury."

The 2017 slate of projects brings the Grayson-Jockey Club Research Foundation totals since 1983 to 346 projects at 43 institutions for a total of \$24,836,711.

"It is very gratifying that research in general, and the Foundation in particular, have such acceptance among so many to whom the horse is important," said Edward L. Bowen, president of Grayson. "This results in a broad partnership involving generous donors as well as a cadre of brilliant minds and dedicated professionals."

The 2017 slate of projects brings the Grayson-Jockey Club Research Foundation totals since 1983 to 346 projects at 43 institutions for a total of \$24,836,711
For more detailed information <http://goo.gl/HLnPW0>

NEW PROJECTS: (comments by researchers) **Endocrinopathic Laminitis: Pathophysiology And Treatment**

James Belknap, Ohio State University

This study will determine if continuous digital hypothermia is effective and therefore indicated in the management of endocrinopathic laminitis, the most common form of the disease.

Anticoagulants As Thromboprophylaxis For EHV-1 Infection

Tracy Stokol, Cornell University

If we can block blood clotting with drugs, we may prevent abortion and neurological disease from occurring in horses infected with EHV-1.

Platelet Lysate Therapy In Infectious Arthritis

Lauren Schnabel, North Carolina State University

This proposal examines the antibacterial properties of platelets to treat joint infections in horses more effectively than conventional therapies, with the goal of reducing morbidity and mortality.

Metabolomic Profiling Of Placentitis Biomarkers In Mares

Christopher Bailey, North Carolina State University

Metabolomic profiling of mares with placentitis will allow development of screening and specific assays to improve treatment outcome.



Evaluation Of Kisspeptin And Pregnant Mares

Christianne Magee, Colorado State University

This proposal will allow us to gain insight as to how kisspeptins are involved in equine pregnancy and if they can serve as a biomarker for pregnancy compromise.

Bone Marrow Mononuclear Cells For Equine Joint Therapy

Linda Dahlgren, Virginia Maryland CVM

The results from this study will pave the way to investigate a new cell therapy from equine bone marrow as a targeted regenerative therapy for horses suffering from arthritis.

Predicting The Risk Of Equine Fatal Injury During Racing

Tim Parkin, University of Glasgow

We will use the Equine Injury Database (EID) to better predict and identify horses at greatest risk of fatal injury during racing and provide measures to further reduce the number of horses dying on North American racetracks.

Cytotoxic T-Cell Immunity To Equine Herpesvirus Type 1

Doug Antczak, Cornell University

This research will develop critically needed knowledge about how the horse immune system responds to equine herpesvirus type 1 vaccination and infection.

Is Exercise-Induced Pulmonary Hemorrhage A Consequence Of High Left Atrial Pressures?

Warwick Bayly, Washington State University

We will test the theory that EIPH occurs because very high pressures in the left side of the heart during exercise result in pressures in the lungs' smallest vessels that cause them to break and bleed.

Ethyl Pyruvate Improves Survival In Large Colon Volvulus

Susan Holcombe, Michigan State University

The results of this proposed clinical trial will demonstrate the effectiveness of ethyl pyruvate to decrease intestinal damage and improve survival in horses with large colon volvulus.

Synovial Oxylipid Profiles: Role Of Omega-3 Fatty Acids

John Caron, Michigan State University

This project is an important first step in establishing science-based guidelines for the nature and amount of dietary polyunsaturated fatty acids that will prevent or delay osteoarthritis in horses.



Second Year Projects:

Thyro-Hyoid Muscle Training to Treat DDSP

Normand Ducharme, Cornell University

(DDSP is Dorsal Displacement of the Soft Palate.) A better knowledge of DDSP mechanism will give the basis for new treatment options and prophylactic training methods to prevent or reduce the occurrence of DDSP in young horses starting training.

A Novel Vaccine Against Equine Strangles

Noah Cohen, Texas A&M University

We have a new concept for a vaccine to protect horses against the disease known as Strangles and have good preliminary data suggesting this vaccine will be safe and effective.

Fitness and Persistence of Drug Resistant *R. equi*

Steeve Giguere, University of Georgia

We will determine if drug-resistant *Rhodococcus equi* can persist in the environment and if resistant strains are more likely to cause disease than susceptible strains.

Novel Analgesic Combination in Horses

Alonso Guedes, University of Minnesota

We propose to study a novel, likely more efficacious and potentially safer approach than currently available options to manage pain in horses.

Training and Surfaces for Injury Prevention

Susan Stover, UC Davis

Risk for bone fracture in the fetlock joint due to training program and race surface properties will be determined using computer models that simulate bone damage and repair.

Host-directed Control of *R. equi* Foal Pneumonia

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.

Unraveling Complex Traits by Defining Genome Function

Carrie Finno, UC Davis

This proposal defines the critical next step to understand underlying mechanisms of disease by developing a database of tissue-specific gene expression and regulation in the healthy adult horse.

EHV-1 and Latency

Lutz Goehring, Ludwig Maximilians University

We will know about EHV-1 latency locations; about prevalence in horse populations, and if different latency stages exist. Finding 'stages' will allow us to speculate on interventional strategies.

LEV MILLER ELECTED TO POLO HALL OF FAME

Grayson-Jockey Club Research Foundation board member Leverett Miller was recently inducted into the Hall of the Fame of the Museum of Polo in Lake Worth, Fla.

The Museum announced: "Honored for outstanding contributions to the sport. . . [is] Museum founder Leverett S. Miller, who through his extraordinary vision and unwavering effort built the only Museum of Polo in the world.

Under his leadership, this magnificent home for the art treasures and historic content commemorating our sport was funded, constructed, and completed, and a dream became a reality. The doors will have been opened exactly 20 years when Lev and the other inductees are feted in February 2017. Jack Oxley, a great Museum contributor, supporter, and member of the Board as well as a Hall of Famer himself, may have summed it up best when he said, "Lev grabbed that ball and ran it in for a touchdown." Oxley is also a member of the Grayson board of directors.

Lev and Linda Miller reside in Palm Beach, Fla. In addition their personal support of Grayson, the Polo Museum, and other equine causes, they are Thoroughbred breeders and owners.



Leverett & Linda Miller

2017 CAREER DEVELOPMENT AWARD RECIPIENTS

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. This year the award winner is:

Shavahn C. Loux - University of Kentucky

Dr. Loux is a postdoctoral fellow at the Gluck Equine Research Center at the University of Kentucky. Her project, "MicroRNAs as Markers of Placental Health in the Mare," will be analyzing the microRNA (miRNA) population in mares throughout normal gestation, as well as during experimentally induced placentitis. RNA isolated from chorioallantois (6, 8, and 10 months of gestation) will be sent to the R. J. Carver Biotechnology Center at the University of Illinois (Urbana, IL) for next-generation sequencing to fully characterize the miRNA population at each given interval and to maximize the data generated by each sample. Significant changes will be verified by qPCR, and will encompass a greater number of samples. Professor and Albert Clay Endowed Chair, Dr. Barry A. Ball is her advisor on the project.

The Elaine Klein Development Award is a competitive program intended to promote development of promising investigators by providing a one year salary supplement of \$15,000. This program is restricted to one award per year and is named in honor of renowned horsewoman, Elaine Klein. The grant is funded by \$15,000 donations by the Klein Family Foundation. The 2017 award winner is:

Sarah Jacob- Michigan State University

Dr. Jacob and Dr. Patty Weber of the Michigan State University College of Veterinary Medicine will be working in collaboration with Dr. Molly McCue of the University of Minnesota on the project entitled, "Biomarkers of Equine Metabolic Syndrome, Age and Diet". Veterinarians have identified equine metabolic

syndrome (EMS) as the most common cause of laminitis. A key component of EMS1 is insulin resistance characterized by hyperinsulinemia and/or abnormal glycemic/insulinemic responses to oral or intravenous glucose challenge. A causal role for insulin in laminitis development has been supported by studies of hyperinsulinemia in horses and ponies. Similar to type 2 diabetes mellitus in humans, EMS is a complex trait with risk of disease due to the interaction between innate (i.e. genetics, breed, age) and environmental (e.g. diet, exercise) factors.

The emerging clinical importance of EMS and insulin dysregulation justifies studies that advance understanding of underlying pathophysiology; knowledge that will lead to improved methods for identification of at-risk individuals before the onset of disease and identify new therapeutic targets.

***It's Never Too Early to
Save the Date***



**2017
BELMONT STAKES
CHARITY CELEBRATION**
Thursday, June 8, 2017
Bryant Park Grill
New York • NY