



A World of Opportunity to Help Horses, Llamas & Alpacas



2011 SPONSORSHIP OPPORTUNITIES



Taking the Reins to Give Longer, Healthier Lives

“Healthy as a horse” is a bit of a misnomer because, in reality, it can be tough to keep horses healthy. Similarly, little is known about the health of llamas and alpacas, which are becoming increasingly popular as pets and recreational animals. Morris Animal Foundation works hard to improve the health of horses, llamas and alpacas, and our funding has led to major advances in veterinary care and welfare for these animals.

Your Morris Animal Foundation sponsorship supports the development of new methods to diagnose or treat diseases, perhaps even health issues that have affected one of your animals. In many cases, your support will also help train the next generation of animal health scientists.

Supportive sponsors have allowed Morris Animal Foundation to significantly advance animal health and welfare over the past 60 years. In 2011, more than 30 studies to advance equine and camelid health and welfare are available for sponsorship (see the descriptions in this book). At any given time, the Foundation oversees about 300 active studies, so if you are interested in sponsoring studies for dogs, cats or wildlife, you may request a booklet at sponsorship@MorrisAnimalFoundation.org or download them at www.MorrisAnimalFoundation.org/sponsorship.

By becoming a sponsor, you help to ensure a healthier tomorrow for horses, llamas and alpacas. Sponsors receive progress updates throughout the length of the study, final reports, a thank you letter from the lead scientist and recognition on the Morris Animal Foundation website and in printed publications that discuss your project.

Giving levels are as follows:

- Co-sponsor: Starts at \$3,000 per year
- Full Sponsor: Equal to the study's current-year budget, generally between \$10,000 and \$100,000

Call 800.243.2345 or e-mail sponsorship@MorrisAnimalFoundation.org for more information on how you can help horses, llamas and alpacas enjoy longer, healthier lives.





Health Successes for Horses

At Morris Animal Foundation, we recognize that horses are not only powerful, athletic creatures but also beloved companions. That's why, in 1959, we expanded our health studies to include studies that address health conditions specific to horses. Here are a few recent examples of how we've improved equine health.

Improving Equine Genetics: The Equine Health Initiative is the largest equine health campaign in Morris Animal Foundation's history. The first project, the Equine Consortium for Genetic Research, has led to major insights into preventing and treating diseases with heritable risk factors. For example, researchers identified the genetic mutation that causes lavender foal syndrome and developed a simple, noninvasive test to detect adult carriers and foals afflicted with the syndrome.

Managing Muscle Disorders with Nutrition: With help from Morris Animal Foundation, a researcher at the University of Minnesota has been studying polysaccharide storage myopathy (PSSM), a painful muscle disorder known as tying up, for more than 20 years. Her research led to the discovery of the genetic mutation for type 2 PSSM and has also focused on diagnosing the disorder and managing it through specific diet and training regimens.

Improving Eye Cancer Treatment: Squamous cell carcinoma—the most common cancer affecting the eyes and ocular structures of horses—is directly linked to sun exposure. It can be painful and difficult to treat, but researchers at the University of Missouri developed a novel approach to treating periocular squamous cell carcinoma, and preliminary results suggest that it may be more effective than current treatments, require fewer treatments and shorter hospital stays and preserve eyelid function.

Learn more about our equine health successes in the Our Research section of our website at www.MorrisAnimalFoundation.org.



A Healthier Tomorrow for Horses

AGING

Maintaining Muscle Mass in Older Horses

Dr. Kristine Urschel, University of Kentucky, First Award Grant, D09EQ-310

Total Study Cost: \$118,800

Co-sponsorships Available

As horses age they experience declines in muscle mass that affect their health and performance. Muscle loss may be accelerated if the horse develops other geriatric conditions, such as systemic inflammation or Cushing's disease. These problems appear to be due to reduced rates of protein synthesis, but no research has confirmed this in horses. Researchers will investigate how age, inflammation and Cushing's disease affect the horse's protein metabolism. This research will provide valuable information about protein metabolism in older horses and allow for improved diet formulation and management strategies.

BONE/MUSCULOSKELETAL

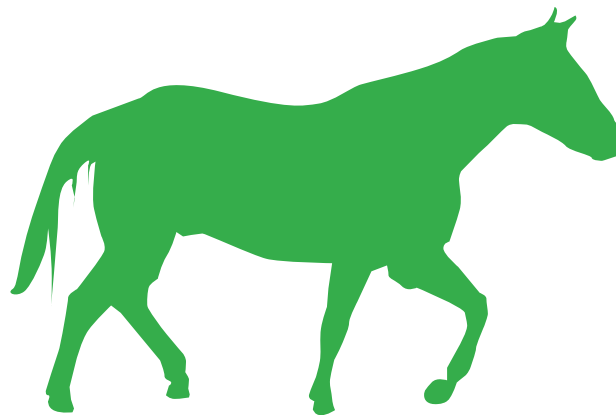
Identifying Susceptibility of "Tying Up" in Thoroughbreds

Dr. Krista Fritz, University of Minnesota, Fellowship Training Grant, D10EQ-405

Total Study Cost: \$108,309

Co-sponsorships Available

Recurrent exertional rhabdomyolysis (RER) is a heritable skeletal muscle disorder that affects the health and performance of up to 10 percent of all thoroughbred horses. It is likely the most common form of "tying-up," which is characterized by a stiff gait, muscle cramping, pain and reluctance to move following mild to moderate exercise. RER appears to be a novel genetic defect that is influenced by gender and environmental factors. With this training grant, the fellow will work with a team of equine scientists that have identified several chromosomal loci that contribute significantly to RER susceptibility. This research will define the genetic cause for RER susceptibility in thoroughbreds, provide practical DNA-based testing that can be used to identify horses susceptible to RER, allow targeted treatment regimens to be selected to manage this frustrating condition and lead the way toward identifying genetic loci for complex and gender-influenced traits in horses.



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BONE/MUSCULOSKELETAL

Evaluating Grazing Strategies to Minimize Pasture-associated Laminitis

Dr. Paul Siciliano, North Carolina State University, D10EQ-063

Total Study Cost: \$76,982

Co-sponsorships Available

Laminitis is a systemic disease that manifests in horses' feet and results in significant pain and lameness. Surveys suggest that a large proportion of laminitis cases occur in horses that graze in a pasture. Consuming large quantities of rapidly fermentable nonstructural carbohydrates (NSCs) present in cool-season pasture grasses has been implicated in the development of pasture-associated laminitis. Therefore, controlling grazing horses' intake of NSCs may be a useful strategy for preventing pasture-associated laminitis. This research will evaluate two strategies to reduce NSC concentrations by restricting the amount of time horses in the study spend grazing in a pasture and restricting the time of day in which they graze. The outcome of this study will contribute to strategies aimed at the prevention of pasture-associated laminitis.

BONE/MUSCULOSKELETAL

Determining Ability to Derive Stem Cells to Improve Therapy

Dr. Lawrence Smith, University of Montreal, D10EQ-056

Total Study Cost: \$191,400

Co-sponsorships Available

Injuries to the musculoskeletal system, primarily injuries to the tendons, cartilage or ligaments, account for the majority of the injuries sustained during equine sporting events. In adult horses, the ability to completely repair these types of injuries is limited. The cost and welfare issues related to these injuries have stimulated interest in stem cell-based regenerative medical techniques to help accelerate and improve healing. Induced pluripotent stem (iPS) cells, adult cells that are genetically reprogrammed to an embryonic stem cell-like state, have the potential to help the healing process but have not yet been studied in horses. Researchers from the University of Montreal will derive iPS cells from adult horses. Their findings could help demonstrate that iPS cells are a viable platform for developing new regenerative therapies for horses.



A Healthier Tomorrow for Horses

BONE/MUSCULOSKELETAL

Repairing Damaged Tendons and Alleviating Lameness

Dr. Jennifer Barrett, Virginia Tech, First Award Grant, D09EQ-312

Total Study Cost: \$113,925

Co-sponsorships Available

Lameness, often caused by tendon and ligament injuries, causes significant disease in horses, and lame horses are often relinquished. A cutting-edge approach to treating tendon and ligament injuries is to inject stem cells or progenitor cells into the lesions to help heal tissue. These cells can be taken from various areas in the body, but there is no information as to which cell type is best for healing tendons. Researchers will compare the three most promising sources of stem cells—bone marrow, fat and tendon—and determine how best to prepare these cells to regenerate tendons. This work will help researchers develop the optimal approach to treating injured tendons in horses.

BONE/MUSCULOSKELETAL

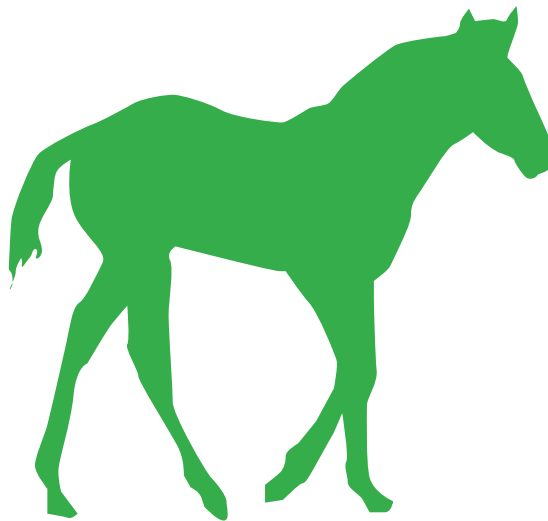
Identifying Factors That Lead to Laminitis

Dr. Samuel Black, University of Massachusetts, D08EQ-054

Total Study Cost: \$228,118

Co-sponsorships Available

Equine laminitis is a crippling condition in which the tissue that suspends the horse's skeleton within the hoof deteriorates. Due to both the devastating nature of the disease and the lack of effective therapies, developing new equine laminitis treatments is a top research priority. Researchers hope to identify the enzymes that prompt the development of laminitis. The goal is to identify the mechanisms that cause the equine digital laminae to fail and to use this information to select drugs that could inhibit the process.



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BRAIN/NEUROLOGICAL DISEASES

Understanding Wobbler Syndrome

Dr. Jennifer Janes, University of Kentucky, Fellowship Training Grant, D09EQ-404

Total Study Cost: \$110,000

Co-sponsorships Available

Wobbler syndrome is a devastating neurological disease of horses. It occurs when the spinal canal in the neck narrows due to abnormal formation of the neck vertebrae and compresses the spinal cord, causing severe neurological deficits. Current treatment options are limited. Multiple factors are thought to contribute to disease development, including genetics, nutrition, trauma, rapid growth and altered copper and zinc levels. Researchers will examine the role of abnormal bone and cartilage formation in neck vertebrae and will identify regions of DNA and specific genes, if present, that are involved in the disease process. Results of this study will enhance the understanding of Wobbler syndrome, advance imaging and DNA-based diagnostic technologies and provide a scientific foundation for research that will improve management and therapeutic practices in all equine breeds.

CANCER

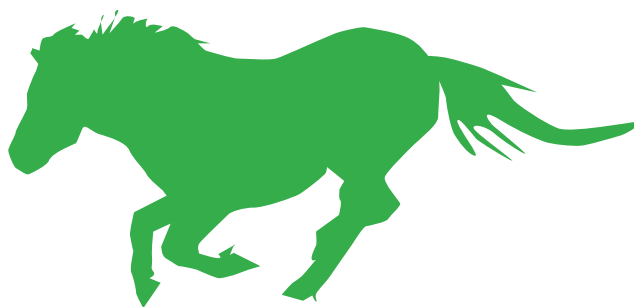
Studying Susceptibility of Gray Horses to Skin Cancer

Dr. Molly McCue, University of Minnesota, D10EQ-028

Total Study Cost: \$27,016

Co-sponsorships Available

Melanoma, a primary skin tumor, affects about 80 percent of gray horses over the age of 15. Although melanomas begin as small, slow-growing tumors, over time most of them metastasize to distant sites, resulting in systemic complications and decreased longevity. It is well known that gray coat color predisposes horses to the formation of dermal melanomas. However, some gray horses seem to be protected from the development of melanoma. The reason for the decreased incidence of melanoma in these horses is unclear. This study will classify melanoma patients into risk categories based on genetic predispositions. The goal is to provide veterinarians with information that will help them identify patients that are candidates for early intervention, when therapy options are more plentiful. While the focus of this study is the quarter horse, the data obtained can be extrapolated to any breed in which both the gray and chestnut mutations occur.



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A Healthier Tomorrow for Horses

GENETICS

Studying the Molecular Basis for Genetic Diseases in Horses

Dr. Nichol Schultz, University of Minnesota, Pfizer Animal Health–Morris Animal Foundation Fellowship, D09EQ-907

Total Study Cost: \$88,000

Co-sponsorships Available

The use of genetics and genomics offers tremendous opportunities to develop new ways to diagnose, treat and prevent equine disease. The research fellow will study the molecular basis of equine genetic disease and genomic influences on complex diseases while she is enrolled in the Comparative and Molecular Biosciences Graduate Program at the University of Minnesota.

INFECTIOUS DISEASES

Identifying Genetic Markers Linked to Equine Viral Arteritis

Dr. Udeni Balasuriya, University of Kentucky, Pilot Study, D10EQ-811A

Total Study Cost: \$11,880

Co-sponsorships Available

Equine viral arteritis appears to be on the rise because horses are increasingly transported nationally and internationally for breeding and competition. The vast majority of equine arteritis virus (EAV) infections cause only a few clinical problems, but acutely infected animals may develop a wide range of health problems, and the virus can also cause abortion in pregnant mares. Stallions can become persistently infected and continuously shed the virus in their semen. Chronically infected stallions can transmit the virus to susceptible mares through natural breeding and artificial breeding during embryo transfer. Recently, these researchers showed that an in vitro test could be used to predict which horses are highly susceptible to EAV infection. Through this study, the team hopes to identify a genetic marker(s) that correlates with a stallion becoming an EAV carrier. They may then be able to develop a genetic test to identify stallions that are predisposed to persistent infection. This is the first genome-wide association study of horse genetic susceptibility to EAV or any other equine infectious disease.





INFECTIOUS DISEASES

Evaluating Immune Responses to *Rhodococcus equi*

Dr. Stephen Hines, Washington State University, D10EQ-046

Total Study Cost: \$219,102

Co-sponsorships Available

Rhodococcus equi is a bacteria that causes life-threatening bacterial pneumonia in foals. It is found in the soil wherever horses are raised, and on some farms morbidity rates can exceed 40 percent. Although horses become immune when they reach adulthood, there are no effective vaccines to prevent this devastating disease in foals. With previous Foundation support, these researchers helped define what immune responses an effective vaccine will need to elicit. In this study, the team will investigate the role of lipids found in the bacterial cell wall in immunity to *R. equi*. They will also test a novel immunization approach and determine whether inclusion of unique *R. equi* lipids can induce protective immune responses in foals. This study will help increase the knowledge of this disease and possibly save thousands of foals who could be spared if a vaccine were developed.

INFECTIOUS DISEASES

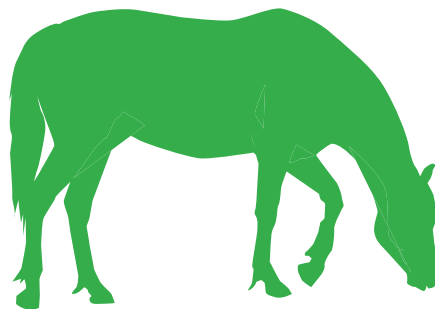
Recognizing Age-related Differences in Immune Response of Foals

Dr. Noah Cohen, Texas A&M University, D10EQ-020

Total Study Cost: \$70,638

Co-sponsorships Available

Bacterial infections are major causes of disease and death in foals, and neonatal foals in particular are at increased risk of infectious diseases. Strong innate immune responses are critical for protecting newborn foals from infections. Neutrophils—mature white blood cells that fight disease—play an essential role in innate immunity, but functional responses of neutrophils are immature in newborns. To better understand this deficiency, this research will compare structural changes in genes and the genes' regulatory elements of neutrophils of newborn foals to those of older foals in order to identify the critical regulators of impaired neutrophil function in newborns. The information obtained from the study will be used to identify biological pathways and processes that are involved in regulating neutrophil maturation and target them for therapeutic interventions to enhance foal resistance to infectious disease. This study could have a major impact on foal health because bacterial infections are the leading causes of disease and death neonatal foals.



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A Healthier Tomorrow for Horses

INFECTIOUS DISEASES

Better Understanding of Bacterial Pneumonia in Foals

Dr. Steeve Giguère, University of Georgia, D10EQ-009

Dr. Tracy Sturgill, University of Georgia, Fellowship Training Grant, D10EQ-403

Total Study Cost: \$90,171

Total Fellowship Training Grant Cost: \$110,000

Co-sponsorships Available

Co-sponsorships Available

Rhodococcus equi causes severe bacterial pneumonia in foals, and the disease is endemic on many horse-breeding farms. On such farms, costs associated with early diagnosis, veterinary care, long-term therapy and significant foal mortality are exorbitant. In spite of the magnitude of this problem, little progress has been made in the prevention of infection by this devastating pathogen. In contrast to foals, adult horses are resistant to *R. equi* infections. The ability of *R. equi* to survive in macrophages (a type of cell that can kill other bacteria) is at the basis of its ability to cause disease. The study will investigate mechanisms by which macrophages can become activated to kill *R. equi*. A better understanding of how foal macrophages can eradicate *R. equi* may lead to ways to prevent the disease.

INFECTIOUS DISEASES

Lawsonia intracellularis Infections in Horses

Dr. Allen Page, University of Kentucky, Pfizer Animal Health–Morris Animal Foundation Fellowship, D09EQ-908

Total Study Cost: \$88,000

Co-sponsorships Available

Little is known about *Lawsonia intracellularis* (LI), a bacterium that causes intestinal illness in horses. As a recipient of the Pfizer Animal Health–Morris Animal Foundation Fellowship, the researcher will complete a PhD program at the University of Kentucky, where he will study the epidemiology of LI. This fellowship will allow him to continue his previous work with the university's large horse populations, which have recently experienced LI outbreaks.





INFECTIOUS DISEASES

New Tools to Diagnose Infectious Diseases

Dr. Bettina Wagner, Cornell University, D09EQ-013

Total Study Cost: \$196,951

Co-sponsorships Available

Understanding the equine immune response is essential for developing efficient vaccines against many viruses, including *Rhodococcus equi*, influenza, equine herpesvirus and newly emerging infectious diseases. Better information is also needed for developing new diagnostic and treatment strategies for acute and chronic inflammatory diseases, such as recurrent airway obstruction and laminitis. Researchers will develop novel tools for studying the equine immune system that will help the equine research community diagnose a wide variety of equine infectious diseases and inflammatory conditions. This project will contribute to the development of new and improved vaccines and novel treatment strategies.

INFECTIOUS DISEASES

Identifying Cause of Blood Clots in Horses with Herpesvirus

Dr. Tracy Stokol, Cornell University, D09EQ-009

Total Study Cost: \$176,702

Co-sponsorships Available

Equine herpesvirus (EHV-1) is a common virus that affects horses worldwide. It can cause spinal cord injuries that lead to devastating neurological disease. Mildly affected horses may only lose tail sensation, but severely affected horses are often paralyzed and must be euthanized. These injuries occur because blood clots form in the horse's blood vessels, starving the spinal cord of oxygen. Why horses with EHV-1 develop these blood clots is unknown. Researchers will determine whether EHV-1 produces blood clots by infecting cells within the bloodstream or cells lining blood vessels, turning them into clot-forming agents. The findings will provide insight into why horses with EHV-1 infection develop neurological disease.



A Healthier Tomorrow for Horses

INFECTIOUS DISEASES

Identifying Genes Involved in Equine Herpesvirus

Dr. Gisela Soboll Hussey, Colorado State University, D09EQ-007

Total Study Cost: \$110,360

Co-sponsorships Available

Despite the widespread use of vaccines, equine herpesvirus (EHV-1) continues to cause devastating health problems for horses, including neurological disorders, abortion, neonatal foal death and respiratory disease. Vaccines may be failing due to the immunosuppressive properties of this virus. Researchers will use an equine airway culture system to study the role of specific genes that may impair a horse's early immune response to EHV-1. This new information will identify new targets for developing therapies and will have wide-ranging impacts on the ability to design effective EHV-1 vaccines that could prevent infection.

RESPIRATORY DISEASES

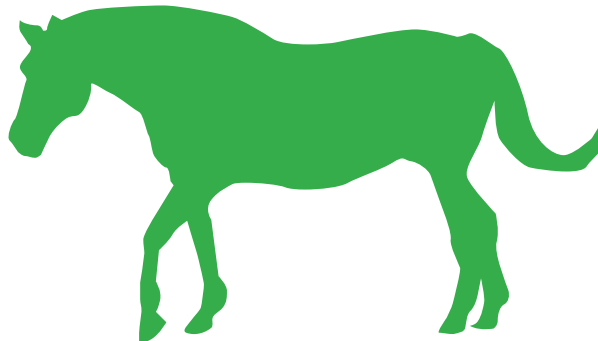
Evaluating the Use of Computed Tomography in Diagnosing Respiratory Illness

Dr. Kara Lascola, University of Illinois, Pilot Study, D10EQ-807A

Total Study Cost: \$10,864

Co-sponsorships Available

Respiratory illnesses frequently cause death and illness in foals. These diseases are usually diagnosed through radiographic or ultrasonographic imaging of the lungs, but computed tomography (CT), considered the best imaging tool for diagnosing respiratory disease in humans, may offer veterinarians more advanced diagnostic capabilities. CT's usage in foals has been limited due to the time required for the procedure (up to one hour per body part) and the need for general anesthesia. These limitations are especially pertinent to compromised neonates, such as those with respiratory disease, where risks associated with general anesthesia are greater. Newer, high-speed CT has dramatically reduced the time required for CT studies in other species and has eliminated the need for general anesthesia. In order to accurately interpret CT abnormalities in foals, an understanding of normal CT lung morphology is essential. This study will provide qualitative and quantitative descriptions of lung CT images in healthy foals. The information can then be used to better characterize respiratory disease as well as improve treatment strategies and predict the outcome for foals with respiratory illness.



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RESPIRATORY DISEASES

Investigating Respiratory Problems in Horses

Dr. Margaret Wilson, Michigan State University, Pfizer Animal Health–Morris Animal Foundation Fellowship, D09EQ-910

Total Study Cost: \$88,000

Co-sponsorships Available

The research fellow is board certified by the American College of Veterinary Internal Medicine and has studied respiratory disorders. These studies have included investigations of diagnostic imaging modalities, heaves and exercise-induced pulmonary hemorrhage. This fellowship is partially funding her PhD program at Michigan State University, which will enhance her training in equine health research.

STOMACH/GASTROINTESTINAL DISEASES

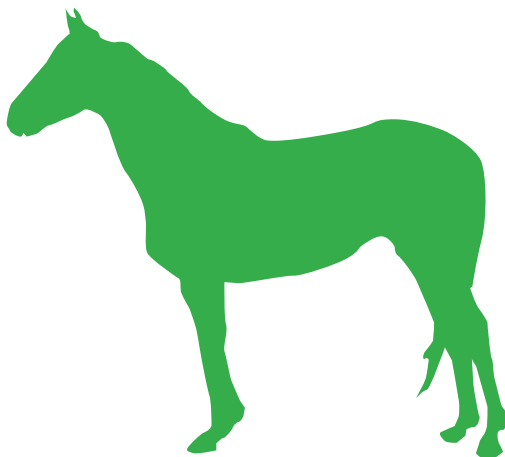
Analyzing the Safety of a New Staple for Use After Colic Surgery

Dr. Adam Biedrzycki, University of Wisconsin, Pilot Study, D10EQ-808A

Total Study Cost: \$6,296

Co-sponsorships Available

Colic, a severely painful condition in which the colon is displaced or twisted, is one of the most frequently diagnosed conditions in horses. Advances in anesthesia and surgical techniques have improved the prognosis for horses recovering from abdominal surgery; however, surgical-site infections still cause substantial problems. An estimated 40 percent of horses that undergo intestinal surgery experiences complications. Metallic staples have been used to close wounds for the past 40 years; however, they have many disadvantages, including the potential for inflammation, bacterial infection and scarring. Not only can removing metallic staples be painful to the horse, but it can compromise the safety of the veterinarian removing them. Recently, absorbable staples that are placed under the skin and not visible from the outside have been used successfully in humans. This pilot study is the first to assess the safety and potential clinical implications of this type of staple in horses after colic surgery. Researchers will use in vitro methods that would allow for a subsequent clinical trial in live horses.



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Co-sponsorships begin at \$3,000. Call 800.243.2345 to choose your study today.



A Healthier Tomorrow for Horses

STOMACH/GASTROINTESTINAL DISEASES

Testing a New Tool for Evaluating Colic Patients

Dr. Sam Hurcombe, Ohio State University, Pilot Study, D10EQ-805A

Total Study Cost: \$11,790

Co-sponsorships Available

Colic caused by displacement or strangulation of the large colon is a significant cause of pain and death in horses. Horses often need emergency colic surgery, during which time the surgeon must decide whether the colon is viable or is so severely damaged that it must be removed. Current assessment methods are subjective, time-consuming, inaccurate or impractical. Researchers are investigating the use of a handheld, dark-field microscope, called the Microscan, which will allow them to evaluate the small vessel flow through the colon by simply applying the microscope to the surface of the colon and watching blood cells flow through the small vessels. If effective, Microscan would give equine colic surgeons a novel tool in determining the most appropriate treatment plan for their equine patients at the time of surgery.

STOMACH/GASTROINTESTINAL DISEASES

Investigation of Colic Cells in Horses

Dr. John Marshall, North Carolina State University, Pilot Study, D09EQ-803B

Total Study Cost: \$7,377

Co-sponsorships Available

Colic is a painful condition that affects an estimated 4 of 100 horses each year. Currently, the only way to study this disease is by using invasive methods on live animals. This study will develop a novel technique that noninvasively isolates cells from adult horses with colic. Scientists would be able to use these cells to study equine intestinal physiology and treatments for colic in the laboratory rather than using live horses. If successful, this technique would give researchers more rapid information about the composition of colic cells and allow them to develop more effective treatments for this devastating disease.





STOMACH/GASTROINTESTINAL DISEASES

Better Understanding of Colitis

Dr. Brett S. Tennent-Brown, University of Georgia, First Award Grant, D09EQ-306

Total Study Cost: \$117,939

Co-sponsorships Available

Colitis is a common, often severe disease of horses, which is characterized by inflammation of the large intestine and typically is accompanied by diarrhea. It often has a poor prognosis for survival because affected animals may suffer severe fluid and electrolyte losses as well as injury to their gastrointestinal tracts. Affected horses also experience a high incidence of complications, including laminitis, which can significantly affect their chances for survival and quality of life. Many of the abnormalities in colitis occur when the horse's immune system launches an excessive inflammatory reaction to bacterial toxins released from the intestine. Because it is the white blood cells that launch the immune response and cause inflammation, researchers will determine changes in white blood cell activation and function that occur in horses hospitalized for colitis. Better understanding of this process in horses will help veterinarians provide more effective treatments.

STOMACH/GASTROINTESTINAL DISEASES

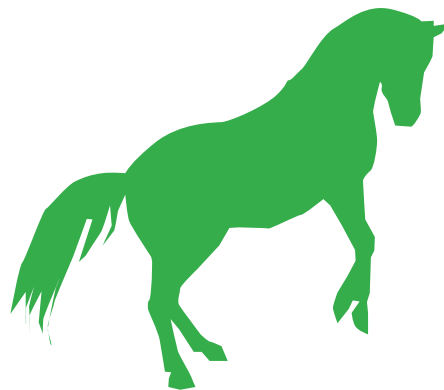
Effects of Bacterial Toxins on the Immune System

Dr. James Moore, University of Georgia, D09EQ-001

Total Study Cost: \$80,903

Co-sponsorships Available

When horses suffer from serious intestinal diseases, such as colic, parts of the bacteria that normally live in their intestines enter the bloodstream, where they activate the immune system. A toxic part of intestinal bacteria, called endotoxin, over-activates the horse's white blood cells. Veterinarians counteract the effects of endotoxin with the antibiotic polymyxin B. New evidence suggests that other portions of intestinal bacteria also activate the immune system. Researchers will study the effects of these bacterial toxins on white blood cells of horses and determine whether polymyxin B can alter these inflammatory responses. The findings may help develop new treatments for serious intestinal diseases and bacterial infections.



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A Healthier Tomorrow for Horses

STOMACH/GASTROINTESTINAL DISEASES

Examining New Pain-relieving Drug

Dr. John Marshall, North Carolina State University, Fellowship Training Grant, D08EQ-408

Total Study Cost: \$110,000

Co-sponsorships Available

Colic is a major cause of death in horses. Surgical removal of an injured intestine may be necessary, but unfortunately complete removal of damaged intestine is not always possible, and this decreases the rate of survival. Flunixin is a drug commonly used to treat colic; it is critical for pain relief, but it has also been shown to inhibit intestinal healing. This study examines whether a new drug, robenacoxib, will help the injured intestine recover while also providing pain relief. This drug could help to increase survival rates of horses with colic.





Health Successes for Llamas and Alpacas

Although llamas and alpacas remain a small population in the United States, they are big in personality and charm—and their numbers are growing. Morris Animal Foundation started funding health research for these animals in 1990, and we've had a number of important successes, like those described here.

Developing the Alpaca Genome Map: The Foundation provided sustained funding to develop the alpaca genome map. The molecular genetic tools developed through these studies led to the alpaca's being chosen by the National Cancer Institute for whole genome sequencing.

Increasing the Safety of Anesthesia: Foundation-funded scientists determined that the anesthetic gases sevoflurane and desflurane produce extremely rapid recovery in llamas and alpacas. This knowledge helped increase the safety of general anesthesia in these animals.

Improving Parasite Prevention: Gastrointestinal parasites are a leading cause of disease in llamas and alpacas. With Foundation funding, scientists determined parasite prevalence in the southeastern United States.

Learn more about our camelid health successes in the Our Research section of our website at www.MorrisAnimalFoundation.org.



A Healthier Tomorrow for Llamas and Alpacas

GENETICS

Generation of an Integrated Physical Map for the Alpaca Genome

Dr. Terje Raudsepp, Texas A&M University, D09LA-004

Total Study Cost: \$171,080

Co-sponsorships Available

The first-generation alpaca genome map and the sequence of the alpaca genome are completed. This study will expand the utility of these tools by mapping 500 evolutionarily conserved genes to the alpaca chromosomes. Researchers will also compare the alpaca genome map to other mammalian genome maps to help transfer information from the genomes of human and other well-studied species to the alpaca genome. This work will provide a foundation for the discovery of genes associated with congenital disorders, genetic diseases and other traits, which will lead to the development of valuable tools for breeders to improve the health and welfare of alpacas.

INFECTIOUS DISEASES

Testing the Effectiveness of an Antimicrobial Drug in Alpacas

Dr. Daniela Bedenice, Tufts University, D10LA-003

Total Study Cost: \$18,739

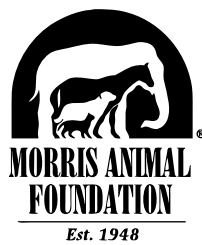
Fully Funded

Bacterial infections that require long-term antibiotic therapy, such as pneumonia, peritonitis, sepsis and uterine and dental infection, are significant causes of illness and death in alpacas. Unfortunately, veterinary care for these animals is hampered by a lack of information about antimicrobial use in camelids (llamas and alpacas). Florfenicol is a broad-spectrum antibiotic that could be potentially useful in alpacas with few side effects, but its use is based on studies in cattle, sheep and other animals. Because significant species-specific differences in florfenicol pharmacokinetics have been documented, it is important to determine the appropriate dosage for use in alpacas. This study will evaluate subcutaneous and intramuscular administration of florfenicol in healthy adult alpacas to determine the drug's ability to maintain the plasma drug levels necessary to be effective, without inducing adverse effects. This is the first step in determining whether this is an effective drug for fighting bacterial infections in alpacas.









For help in selecting a study, contact us at 800.243.2345 or
sponsorship@MorrisAnimalFoundation.org.
Thank you for supporting research to protect, treat and cure animals.

Special thanks to the following people who helped create this piece.

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Nancy Clark

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