

INFECTIOUS DISEASE

Grayson-Jockey Club Research Archives

All the types of infectious diseases that affect horses are too numerous to name. Through research proper treatments are found, as well as determining how they are transmitted and how to contain outbreaks in the horse population.

Grayson is proud to have funded the following infectious disease projects:



[A Novel DNA Vaccine Platform To Control EHV-1 and EHV-4](#)

Cornell University, Principal Investigator: Bettina Wagner

Co-PIs: Diego Diel, Susanna Babasyan, Mathias Martins, Anja Sipka

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.

Years: 2023-2025 TOTAL- \$1,507,817 *Special Call funded by FM Area Foundation*

[Use Of Nucleic Acid Vaccines To Protect From EHV-1/EHM](#)

Michigan State University, Principal Investigator: Gisela Soboll Hussey

Co-PIs: Lutz Goering- University of Kentucky, Nikolaus Osterrieder- University of Hong Kong, Juergen Richt- Kansas State, Paul Lunn- University of Liverpool, Rainer Haag- Freie University-Berlin, Anna K. Blakney University of Vancouver

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.

Years: 2023-2025 TOTAL- \$701,194 *Special Call funded by FM Area Foundation*

[Role of C1q in Rhodococcal Infection](#)

Texas A&M University, Principal Investigator: Angela Bordin

Co-PI: Noah Cohen

A study of 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.

Year: 2024 TOTAL - \$57,381

[Novel Protein Targets for R. equi Serology and Vaccines](#)

Texas A&M University, Principal Investigator: Noah Cohen

Co-PIs: Angela Bordin, Philip Felgner, UC- Davis

A proposal to study the 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.

Year: 2024 TOTAL - \$114,832

[A VapA mRNA Vaccine for R. equi Pneumonia](#)

Texas A&M AgriLife Research, Principal Investigator: Noah Cohen

Co-PIs: Angela Bordin, Jeroen Pollet-Baylor

This study will evaluate a 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.

Years: 2023-2024 TOTAL - \$196,119

[Nanoparticle Vaccines For Equine Rotavirus B](#)

University of Kentucky, Principal Investigator: Feng Li

Co-PIs: Dan Wang, Emma Adam, Thomas Chambers, Allen Page, Ahsan Naveed, Lianne Eertink

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

Years: 2023-2024 TOTAL - \$150,000

[An Efficacious EPM Vaccine Is On The Way](#)

Virginia Maryland, Principal Investigator: Sharon Witonsky

Co-PIs: Tanya LeRoith, Roger Barrios- Ramirez, Stephen Were, Lauren Helber

This study is to have identified potential MHC class I CD8 and MHC class II CD4 protective epitopes for an efficacious vaccine against EPM, due to *Sarcocystis neurona*.

Years: 2023-2024 TOTAL - \$108,842

[Development of a Vectored Vaccine to Equine Rotavirus A](#)

Louisiana State University, *Principal Investigator: Mariano Carossino*

CO-PIs: Udeni B. R. Balasuriya, Konstantin G. Kousoulas, Frank M. Andrews, Come Thieulent, M. Vissani & V. Parreño (Natl de Tecn Agro), M. Barrandeguy (U Salvadore)

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.

Year: 2022 TOTAL -\$ 86,948

[Novel Strangles Vaccine Using CD40-Targeted Delivery](#)

Texas A&M University, *Principal Investigator: Luc Berghman*

CO-PIs: Jill Wright Skrobarczyk, Noah Cohen, Angela Bordin

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.

Year: 2022 TOTAL -\$ 69,630

[Immunogenicity in Foals of an mRNA Vaccine For R. Equi](#)

Texas A&M University, *Principal Investigator: Noah Cohen*

CO-PIs: Angela I. Bordin, Rebecca Legere, Jeroen Pollet (Baylor), Christina Poveda (Baylor)

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

Year: 2022 TOTAL \$75,807

Environmental Origins of Equine Antimicrobial Resistance

University of Georgia, *Principal Investigator: Brandy Burgess*

CO-PIs: Erin M. Beasley, Paul S. Morley, Noelle R. Noyes

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.

Years: 2021-2022 TOTAL - \$ 50,694

New Generation Equine Influenza Bivalent VLP Vaccine

University of Kentucky, *Principal Investigator: Thomas Chambers*

CO-PIs: David W. Horohov, Stephanie Reedy, J Daly - University of Nottingham UK, A Cullinane - Irish Equine Center, Ireland, Celia Abolnik, University of Pretoria - South Africa, M O'Kennedy -CSIR Bioscience South Africa, A Mabetha - CSIR Bioscience South Africa

We propose 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.

Years: 2021-2022 TOTAL - \$ 115,358

Passive Immunization of Foals With RNA-Ab Against R equi

Baylor College of Medicine, *Principal Investigator: Jeroen Pollet*

Co-PIs: Angela Bordin, Ellen Ruth Morris, Philip Felgner, UC DAVIS

With the use of inhalation therapy, this project intent is 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.

Year: 2021 TOTAL - \$88,616

Developing an Improved Serological Test for Strangles

Texas A&M University, *Principal Investigator: Noah Cohen*

Co-PIs: Angela Bordin, Ellen Ruth Morris, Philip Felgner, UC DAVIS

The purpose of this project is to develop a more accurate blood test to identify horses infected with the bacterium that causes strangles to improve control and prevention of strangles.

Year: 2021 TOTAL - \$95,369

Expanding Knowledge of the Micro-Biome in Mares & Foals

University of Kentucky

This project is to provide sampling and analysis including PCR, genomic and microbiology of the micro-biome in mares and foals.

Year 2021 TOTAL - \$10,000

Improving Fungal Diagnosis In Horses

Cornell University, *Principal Investigator: Soon Cheong*

Co-PIs: Craig Altier, Mariana Diel de Amorim, Laura Goodman, Patrick Craine

The goal of this project is development of 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.

Years: 2020-2021 TOTAL - \$118,651

Dynamics of Vitamin D in Hospital Foals

The Ohio State University, *Principal Investigator: Ramiro Toribio*

Co-PIs: Teresa Burns, Laura Dunbar, Katarzyna Dembek (IA State), Stephen Reed (Rood & Riddle), Nathan Slovis (Hagyard), Ahmed Kamr

Critically ill foals often have low blood levels of vitamin D; the goal is to investigate if their levels over time are associated with the severity of their disease and mortality.

Years: 2020-2021 TOTAL - \$133,076

Inhibiting EHV-1 with Anti-Inflammatory Drugs

University of North Carolina Wilmington, *Principal Investigator: Arthur Frampton*

Co-PIs: Jacob Kazenelson, Jeanette Black

This study uses 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).

Years: 2020-2021 TOTAL - \$79,200

Passive Immunization of Foals with RNA-Ab Against R equi

Baylor College of Medicine, *Principal Investigator: Jeroen Pollet*

CO-PIs: Amadeo Biter, Cristina Poveda, Texas A & M: Noah Cohen, Luc Berghman, Angela Bordin, Raquel Rubia Rech

This project reviewed delivery of the genetic code for a protective antibody against *Rhodococcus equi* into the lung cells of newborn foals by inhalation therapy to rapidly protect them against infection.

Year: 2020 TOTAL - \$77,022

Anti-PNAG Plasma for Preventing R. equi Foal Pneumonia

Texas A&M University, *Principal Investigator: Noah Cohen*

CO-PIs: Angela Bordin, Susanne Kahn

Transfusion of plasma is the only licensed product for preventing *Rhodococcus equi* pneumonia, and this study was designed to demonstrate development of a plasma product superior to that available currently.

Year: 2020 TOTAL - \$90,268

Uncovering The Blood B Cell Immune Response To EHV-1

Cornell University, *Principal Investigator: Tracy Stokol*

Co-PIs: John Parker, Charles Danko, Iwijn De Vlaminck, Maria Julia Felipe, Mridusmita Saikia

The purpose of this study was to identify changes in B cell immunity after EHV-1 vaccination by sequencing individual blood B cells and generate a sequencing database to uncover new antibodies against EHV-1.

Year: 2019 TOTAL - \$101,462

Investigating Metabolic Stress And Viral Hepatitis

Cornell University, *Principal Investigator: Sabine Mann*

Co-PIs: Thomas Divers, Joseph Wakshlag, Tracy Stokol, Josh Ramsay (WA ST), Stephen Reed (Rood and Riddle), Drs. Yarbrough/Nordberg (McGaughey & Pletcher), Dr. Cheney (Northrop)

This project studied metabolic pathways and hepatic viral infection to find a relationship with maladaptation to training syndrome/high Gamma-glutamyl transferase to help improve the health and performance of race horses.

Year: 2018-2019 TOTAL - \$117,333

Host Factors Involved In EHM Pathogenesis And Latency

Michigan State University, *Principal Investigator: Gisela Soboll Hussey*

Co-PIs: Lutz Goehring, Patty Weber, Dr. Luyendyk, Lila Zarski, Jessica Prenni (CSU)

This study was for the development of tools to protect horses from EHV-1 infection, compare the immune responses in old and young horses to identify the mechanisms causing clinical EHM.

Year: 2018-2019 TOTAL - \$125,998

AMPK Agonists And Insulin Dysregulation In Horses

The Ohio State University, *Principal Investigator: Teresa Burns*

Co-PIs: James Belknap, Laura Dunbar, Mauria Watts

This project directly impacts the treatment of equine metabolic syndrome by assessing the efficacy of two drugs, metformin and acetylsalicylic acid, in the treatment of equine insulin dysregulation.

Year: 2018-2019 TOTAL – \$112,034

Host-Directed Control Of R. Equi Foal Pneumonia Part II

Texas A & M University, *Principal Investigator: Angela Bordin*

Co-PIs: Londa Berghaus, Courtney Brake, Magnus Hook, Kelsey Hart and Glennon Mays (U of GA),

This was the second phase of a 4 year project that began in 2016, and proposed the 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.

Year: 2018-2019 TOTAL - \$229,034

Epidemiology Of Drug-Resistant R. Equi At Horse Farms

University of Georgia, *Principal Investigator: Kelsey Hart*

Co-PIs: Laura Huber, Noah Cohen (Texas A&M), Nathan Slovis (Hagyard Equine Medical)

This study was set up to determine if isolates of *Rhodococcus equi* highly resistant to antibiotics are widespread at horse breeding farms in Kentucky.

Year: 2018-2019 TOTAL - \$117,990

Cytotoxic T-Cell Immunity to Equine Herpesvirus Type 1

Cornell University, *Principal Investigator: Doug Antczak*

Co-PIs: Rebecca T. Ingram; Julia Kydd; Brian Rudd; Donald Miller; Nikolaus Osterrieder, (Freie U Berlin); Gisela Sobel Hussey, (MI ST)

The goal of this research was to develop critically needed knowledge about how the horse immune system responds to equine herpesvirus type1 vaccination and infection.

Years: 2017- 2018 TOTAL - \$133,103

Anticoagulants As Thromboprophylaxis For EHV-1 Infection

Cornell University, *Principal Investigator: Tracy Stokol*

Co-PIs: Priscila Serpa; Marjory Brooks; Thomas Divers; SallyAnne Ness; Gail Babcock;

Mark Papich (NC State) This study was set up to block blood clotting with drug to attempt to prevent abortion and neurological disease from occurring in horses infected with EHV-1.

Year: 2017 TOTAL - \$116,818

EHV-1 And Latency

Ludwig Maximilians University, *Principal Investigator: Lutz S.Goehring*

Co-PIs: Carlos E Medina Torres; Kaspar Matiasek; Josh Slater; Ana Maria Ulloa;

Gisela Soboll-Hussey (MSU)

Years: 2016-2017 TOTAL - \$107,862

This project studied about EHV-1 latency locations; about prevalence in horse populations, and if different latency stages exist in hopes of finding 'stages' which would allow interventional strategies.

A Novel Vaccine Against Equine Strangles

Texas A & M University, *Principal Investigator: Noah Cohen*

Co-PIs: Angela I. Bordin; Michelle C. Coleman; Courtney Brake (U of GA);

Gerald B. Pier & Colette Cywes-Bentley (Harvard)

Years: 2016-2017 TOTAL - \$119,155

A study of a concept for a vaccine to protect horses against the disease known as Strangles with good preliminary data suggesting this vaccine will be safe and effective.

Host-Directed Control Of R. Equi Foal Pneumonia Part I

Texas A & M University, *Principal Investigator: Angela Bordin*

Co-PIs: Noah Cohen; Steve Giguere; Londa Berghaus; Magnus Hook;

Courtney Brake & Glennon Mays (U of GA)

This project is a 4 year grant completed in two phases which proposed the 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.

Years: 2016-2017 TOTAL - \$189,189

Fitness And Persistence And Of Drug Resistant R. Equi

University of Georgia, *Principal Investigator: Steeve Giguere*

Co-PIs: Noah Cohen (Texas A&M); Jose Vazquez-Boland (U of Edinburgh)

The purpose of this study was to determine if drug-resistant *Rhodococcus equi* can persist in the environment and if resistant strains were more likely to cause disease than susceptible strains.

Years: 2016-2017 TOTAL - \$95,498

IGGS(T) Antibodies Identify Foals at Risk for R. Equi

University of Kentucky, *Principal Investigator: David Horohov*

This project involves the validation of a new test for *Rhodococcus equi* infections in foal.

Year: 2016 TOTAL - \$62,407

Validation of Stall-Side Strangles Diagnosis Using Lamp

University of Pennsylvania, *Principal Investigator: Ashley Boyle*

The aim was to validate a stall-side test that could be used for fast, sensitive, accurate, and cost efficient diagnosis of strangles (*S. equi*) carriers (a highly infectious equine respiratory disease). [LAMP means loop-mediated isothermal nucleic acid amplification.]

Year: 2016 TOTAL - \$22,330

Steroid / Neurosteroid Dynamics in Critically Ill Foals

The Ohio State University, *Principal Investigator: Ramiro Toribio*

Co-PIs: Katarzyna Dembek; Stephen Reed (Rood & Riddle); Nathan Slovis (Hagyard); Kelsey Hart (UN of GA)

This study proposed to elucidate the importance of stress hormones as well as hormones that affect neurological function in the development and progression of diseases of newborn foals.

Years: 2015-2016 TOTAL - \$ 101,518

A Guinea Pig Model of Rhodococcus equi Pneumonia

Texas A&M University, *Principal Investigator: Angela Bordin*

Co-PIs: Noah Cohen; David McMurray; Jeffrey Cirillo; Canaan Whitfield-Cargile; Courtney Brake; Ellen Alexander

This novel studied was to determine is a guinea pig model of *R. equi* pneumonia would help to better understand the disease in foals, and evaluate novel approaches for controlling and preventing *R. equi* pneumonia.

Years: 2015-2016 TOTAL - \$21,221

Inhibition Of Type-I Interferon Response By EHV-1

University of Kentucky, *Principal Investigator: Thomas Chambers*

Co-PIS: David Horohov; Udeni Balasuriya; Fatai Oladunni; Stephanie Reedy

This project explored the mechanism of equine herpesvirus-1 blockage of an immune defense pathway and its relationship to equine herpesviral myeloencephalopathy, a serious condition affecting horses.

Years: 2015-2016 TOTAL - \$133,931

MicroRNAs as Novel Biomarkers or Insulin Resistance

Colorado State University, *Principal Investigator: Tanja Hess*

Co-PIs: Jason Bruemmer; Bridget McIntosh; Rebecca Splan (VA Tech)

In an effort to improve the diagnosis, management and treatment of the many horses and ponies who suffer from metabolic disorders related to insulin dysregulation, an investigation of the ability of novel, small, gene-regulating molecules called microRNAs were used as convenient and accurate biomarkers for equine insulin resistance.

Years: 2015 TOTAL - \$35,008

Role of Biofilm in Infectious Endometritis in the Horse

Colorado State University, *Principal Investigator: Ryan Ferris*

Co-PIs: Brad Borlee; Grace Borlee

This project was designed to obtain a better understanding of the role of bacterial biofilm in conferring protection to the host immune system and antibiotics is crucial to development of therapeutic protocols for treatment of endometritis in mares. (Biofilm: A matrix which provides a 'protective' blanket' for the wall of the uterus.)

Years: 2015 TOTAL - \$22,485

Etiology of IAD and Performance in Racehorses

Purdue University, *Principal Investigator: Laurent L. Couetil*

Co-PIs: Kathleen Ivester; Sandra Taylor; George Moore; Rose Raskin; Gena Hammac; Jyothi Thimmapuram; Donna Griffey; Anisa Dunham

Years: 2014-2015 TOTAL - \$98,811

Anhidrosis in Foals Treated With Macrolides

University of Florida, *Principal Investigator: Robert MacKay*

Co-PIs: Chris Sanchez, Martha Mallicote, Amy Stieler, James Burrow, Julia Conway

This project was set up to do a simple test to show that impaired sweating is the cause of overheating not only in foals given erythromycin but also in some foals treated with azithromycin, clarithromycin, and even the exciting new antibiotic, gamithromycin.

Years: 2014-2015 TOTAL - \$142,533

Platelet Inhibitors Potential Antithrombotics for E

Cornell University, *Principal Investigator: Tracy Stokol*

Co-PIs: Marjory Brooks; Bettina Wagner; Gerlinde Van de Walle; Thomas Divers; Sally Ness; Christine DeLeonardis

This study researched for evidence of platelet and coagulation activation during the acute phase of EHV1 infection and that horses demonstrating more profound activation response would have more severe fever. Part of the study was to compare the inhibitory effects of 4 antiplatelet drugs on EHV1 induced platelet activation.

Year: 2014 TOTAL - \$63,368

R. equi Pneumonia: Can a Novel Vaccine Protect Foals?

Texas A&M University, *Principal Investigator: Noah Cohen*

Co-PIs: Suresh Pillai; Michelle Coleman; Joana Rocha; Courtney Brake; Waithaka Mwangi; Robert Alaniz; Steeve Giguère (UN of GA)

This proposal was set up to evaluate the ability of a vaccine to protect foals against infection with R. equi as an essential next step in our efforts to develop a vaccine against R. equi. and subsequently other infections such as Strep equi, the causative agent of strangles.

Year: 2014 TOTAL - \$74,067

Assessment of a Rhodococcus Equi Vaccine in Foals.

University of Edinburgh, *Principal Investigator: Jose Vazquez-Boland*

Co-PIs: Mariela Scortti; Iain MacArthur; Macarena Sanz; & David Horohov (UN of KY); John Prescott (UN of Guelph)

This study was to determine if protection against this bacterium *Rhodococcus equi* could be achieved by targeting it with a vaccine to prevent infection when still at its initial “colonization” stages in the airways before the bacteria become established in the lung.

Year: 2014 TOTAL-\$62,106

Evaluation of a Rapid Test for Salmonella

Colorado State University, *Principal Investigator: Paul Morley*

Co-PIs: Nathan Slovis; Brandy Burgess; Kristy Pabilonia; Christina Weller; Justine Elam (Hagyard)

Years: 2013-2014 TOTAL - \$57,424

Development of Alternative Models to Study EHM

Michigan State University, *Principal Investigator: Gisela Soboll Hussey*

Co-PIs: Lutz Goehring; Andras Komaromy; Anthony Pease; Stephen Hussey; J. Prenni & C. Broccardo (CO State); Nik Osterrieder, Freihe (UN Berlin); Josh Slater (Royal Vet LONDON)

Years: 2013-2014 TOTAL - \$129,267

Molecular Determinants of EHV-1 Fusion and Spread

University of North Carolina Wilmington, *Principal Investigator: Arthur Frampton*

Co-PI: Jekaterina Barsova

Years: 2013-2014 TOTAL -\$78,500

Gallium: An Alternative to Macrolides Against R. equi EPM

Texas A&M University, *Principal Investigator: Noah Cohen*

Co-PIs: M. Keith Chaffin; Nathan Slovis- (Hagyard Equine Med.); Steeve Giguère (UN of GA)

Year: 2013 TOTAL - \$40,100

The Interaction Between Anthelmintic Treatment and Vacci EPM

University of Kentucky, *Principal Investigator: Martin Nielsen*

Co-PIs: Thomas Chambers; David Horohov; Stephanie Reedy; Holli Gravatte;

Alejandra Betancourt; Jennifer Bellaw; Stine Jacobsen

Year: 2013 TOTAL - \$60,466

Liposomal Gentamicin for the Treatment of R. Equi

University of Georgia, *Principal Investigator: Steeve Giguère*

Co-PIs: Alexandra Burton; Robert Arnold

Years: 2012-2013 TOTAL - \$92,320

Vitamin D and Innate Immunity in the Horse

University of Georgia, *Principal Investigator: Mary Hondalus*

Co-PIs: Steeve Giguère; Kimberly Goldbach

Year: 2012 TOTAL - \$49,942

Do NSAIDs Affect the Immune Response of Horses to Vaccination?

University of Kentucky, *Principal Investigator: David Horohov*

Co-PIs: Thomas Chambers; Allen Page; Whitney Zoll

Year: 2012 TOTAL - \$54,776

Determinants of Immune Protection Against Babesia Equi

Washington State University, *Principal Investigator: Robert Mealey*

Co-PI: Donald Knowles

Years: 2011-2012 TOTAL - \$150,000

Molecular Characterization of EHV-1

University of Kentucky, *Principal Investigator: Udeni Balasuriya*

Co-PIs: R. Frank Cook; Yanqiu Li; Pamela Henney; Peter Timoney; Kathryn Smith

Years: 2010-2011 TOTAL - \$95,361

Rapid PCR Diagnosis of Equine Botulism

University of Pennsylvania, *Principal Investigator: Raymond Sweeney*

Co-PIs: Amy Johnson; Robert Whitlock; Susan McAdams

Years: 2010-2011 TOTAL - \$33,665

Toxins TCD A, B of C Difficile

University of Kentucky, *Principal Investigator: Sergey Artiushin*

Co-PIs: John Timoney; Sridhar Velineni; Sridhar Velineni

Year: 2010 TOTAL - \$45,855

Prevention of EHV-1 Myeloencephalitis

Oklahoma State University, *Principal Investigator: Lara Maxwell*

Co-PIs: Richard Eberle; Jerry Ritchey; Charles MacAllister; Dianne McFarlane

Years: 2009-2010 TOTAL - \$104,431

Cell Signaling/Receptor Molecules for EHV-1

University of North Carolina Wilmington, *Principal Investigator: Arthur Frampton*

Years: 2009-2010 TOTAL - \$77,578

Botulism, Real-Time PCR Test

University of Pennsylvania, *Principal Investigator: Robert Whitlock*
Co-PIs: Raymond Sweeney; Susan McAdams; Amy Johnson
Year: 2009 TOTAL - \$21,600

Development of an Equine In Vitro Respiratory Model to Study Virus-Host Interactions

Colorado State University, *Principal Investigator: Gisela Soboll*
Co-PIs: Gabriele Landolt; D. Paul Lunn
Years: 2008-2009 TOTAL - \$97,480

The Neurologic EHV-1 Marker: Correlation or Causation?

Cornell University, *Principal Investigator: Nikolaus Osterrieder*
Years: 2008-2009 TOTAL - \$97,534

Neuropathogenesis of EHV-1 Infection in Horses

Colorado State University, *Principal Investigator: Lutz S. Goehring*
Co-PIs: D. Paul Lunn; Alan Schenkel
Years: 2008-2009 TOTAL - \$92,231

R. Equi Pneumonia: Does the Magnitude of Airborne Exposure Predict Disease Development?

Texas A & M University, *Principal Investigator: Noah Cohen*
Co-PIs: Craig Carter (UN of KY); Morgan Scott; M. Keith Chaffin
Years: 2008-2009 TOTAL - \$137,798

Molecular Epidemiology of EAV: 2006 Occurrence in the United States

University of Kentucky, *Principal Investigator: Udeni Balasuriya*
Co-PI: Peter Timoney
Year: 2008 TOTAL - \$31,967

Efficacy of Valacyclovir Against Neuropathogenic EHV-1

Oklahoma State University, *Principal Investigator: Lara Maxwell*
Co-PIs: Brad Bentz; Charles MacAllister; Richard Eberle; Jerry Ritchey
Years: 2007-2008 TOTAL - \$74,375

Control of Rhodococcus equi pneumonia Using Gallium

Texas A & M University, *Principal Investigator: M. Keith Chaffin*
Co-PIs: Noah Cohen; Ronald J. Martens
Years: 2007-2008 TOTAL - \$153,286

Enhancing Interferon Gamma Expression in Foals

University of Kentucky, *Principal Investigator: David Horohov*

Co-PIs: C. Meranmt; C. Breathnach

Years: 2007-2008 TOTAL - \$154,821

Tetramers for Precise Measurement of Immunity to EHV-1

Colorado State University, *Principal Investigator: D. Paul Lunn*

Co-PIs: Gisela Soboll; Julia Kydd; Nick Davis-Poynter ; Klaus Osterreider

Years: 2006-2007 TOTAL - \$116,641

Biology of Neuropathogenic Strains of Equine Herpesvirus-1

University of Kentucky, *Principal Investigator: George Allen*

Co-PI: David Azbill

Years: 2006-2007 TOTAL - \$60,000

Rapid Diagnostic Assay for Streptococcus Equi

University of Kentucky, *Principal Investigator: John Timoney*

Years: 2006-2007 TOTAL - \$88,198

Detection of Antibodies to EAV by Microsphere Immunoassay

University of Kentucky, *Principal Investigator: Udeni B. R. Balasuriya*

Co-PI: Peter Timoney

Year: 2006 TOTAL - \$24,702

Sequencing the Rhodococcus Equi Genome

University of Bristol, *Principal Investigator: Jose Vazquez-Boland*

Co-PIs: John Prescott; Julian Parkhill; Wim Meijer; Julian Davies; Shinji Tkai; Iain Sutcliffe

Years: 2005-2006 TOTAL - \$50,000

Evaluation of a Rapid MRSA Test for Horses

University of Guelph, *Principal Investigator: Scott Weese*

Years: 2005-2006 TOTAL - \$26,750

Immune Response of Young Foals Exposed to Rhodococcus

University of Kentucky, *Principal Investigator: David Horohov*

Co-PI: Duane Chappell

Years: 2005-2006 TOTAL - \$145,382

Gallium Therapy to Control Rhodococcus Equi Pneumonia

Texas A & M University, *Principal Investigator: Ronald Martens (Visiting Professor)*

Co-PIs: Noah Cohen; M. Keith Chaffin; Lawrence Bernstein

Year: 2005 TOTAL - \$49,796

New Tools for Detection of Leptospira in Horses

University of Kentucky, *Principal Investigator: Sergey Artiushin*

Co-PI: John Timoney,

Year: 2005 TOTAL - \$34,892

EHV-1 Vaccines for Generation of Cytotoxic Lymphocytes

Colorado State University, *Principal Investigator: D. Paul Lunn*

Co-PI: S. Marulasiddappa

Years: 2004-2005 TOTAL - \$95,650

Vaccine Potential of a Riboflavin-Requiring Strain of R. Equi

Harvard School, *Principal Investigator: Mary Hondalus*

Co-PI: Hugh Townsend

Years: 2004-2005 TOTAL - \$116,757

Are Mares a Source of Rhodococcus Equi for Their Foals?

Texas A & M University, *Principal Investigator: Noah Cohen*

Co-PIs: Nathan Slovis; George Mundy

Years: 2004-2005 TOTAL - \$87,013

Inhibition of Endotoxin with Adenosine Receptor Agonists

University of Georgia, *Principal Investigator: Thomas Murray*

Co-PIs: James Moore; Michel Vandenplas

Years: 2004-2005 TOTAL - \$77,462

Genetic Determinants of Equine Herpesvirus-1 CNS Disease

University of Kentucky, *Principal Investigator: George Allen*

Co-PI: Nick Davis-Poynter

Years: 2004-2005 TOTAL - \$60,000

Production of Antibodies to Selected Equine Cytokines

University of Kentucky, *Principal Investigator: David Horohov*

Years: 2004-2005 TOTAL - \$79,100

Systemically Immunogenic Surface & Secreted Proteins of S. Equi

University of Kentucky, *Principal Investigator: John Timoney*

Co-PI: Sergey Artiushin

Year: 2004 TOTAL - \$42,450

Molecular Epidemiology & Evolution of Sarcocystis Neurona, Agent of EPM

Michigan State University, *Principal Investigator: Linda Susan Mansfield*

Co-PIs: Thomas S. Whittam; A. Mahdi Saeed

Years: 2003-2004 TOTAL - \$52,455

IL-12 as an Adjuvant in a DNA Vaccine for Rhodococcal Pneumonia

Washington State University, *Principal Investigator: Diana Stone*

Co-PI: Steve Hines; Travis McGuire; Melissa Hines

Years: 2003-2004 TOTAL - \$91,063

Response of Foals to Vaccination Against West Nile Virus

University of California – Davis, *Principal Investigator: W. David Wilson*

Co-PI: Judy E. Mihalyi

Year: 2003 TOTAL - \$21,281

Mucosally Immunogenic Surface Expressed Proteins of Streptococcus Equi

University of Kentucky, *Principal Investigator: John Timoney*

Co-PIs: John Walker; Sergey Artiushin

Year: 2003 TOTAL - \$46,500

Respiratory Immune Response of Young Foals

Louisiana State University, *Principal Investigator: David W. Horohov*

Co-PI: Dale Paccamonti

Years: 2002-2003 TOTAL - \$129,930

Equine Genes, Microarrays and Responses to Gram-Positive Toxins

University of Georgia, *Principal Investigator: Michel Vandenplas*

Co-PIs: L. H. Pratt; M. M. Cordonier-Pratt; J. N. Moore; A. Gingle; D. J. Hurley

Years: 2002-2003 TOTAL - \$76,000

Role of Streptococcus Bovis Exotoxins in Equine Laminitis

University of Missouri, *Principal Investigator: Philip Johnson*

Co-PIs: Andria Cogswell; Nat Messer; John Kreeger

Years: 2002-2003 TOTAL - \$98,150

Development of a Refined Equine Model for Equine Protozoal Myeloencephalitis

The Ohio State University, *Principal Investigator: William Saville*

Co-PIs: R. W. Stich; S. M. Reed; M. J. Oglesbee

Years: 2001-2002 TOTAL - \$101,384

Identification of Immunogenic Proteins Unique to Streptococcus Equi

University of Kentucky, *Principal Investigator: John Timoney*

Co-PI: John Walker

Years: 2001-2002 TOTAL - \$90,250

Practical Equine DNA Vaccination: Mucosal Vectors and the "Prime/ Boost" Strategy

University of Wisconsin, *Principal Investigator: D. Paul Lunn*

Co-PIs: Chris Olsen; John Timoney; David Watkins

Years: 2001-2002 TOTAL - \$89,650

Role of DI Particles in Persistent EAV Infection of Stallions

University of California – Davis, *Principal Investigator: N. James MacLachlan*

Co-PIs: Udeni Balasuriya; Jodi Hedges

Years: 2000-2001 TOTAL - \$67,101

Development and Testing of Genetic Vaccines for Vesicular Stomatitis

Colorado State University, *Principal Investigator: Richard A. Bowen*

Years: 2000-2001 TOTAL - \$48,020

Development of BCG Expressing VapA as a Vaccine Against R. Equi

Harvard School, *Principal Investigator: Mary K. Hondalus*

Co-PIs: Barry Bloom; Mary Rose Paradis

Years: 2000-2001 TOTAL - \$101,630

Pathogenesis of Equine Protozoal Myeloencephalitis

Washington State University, *Principal Investigator: Debra Sellon*

Co-PIs: Donald Knowles; Carol Wyatt; Melissa Hines

Years: 2000-2001 TOTAL - \$104,976

Pathogenesis of Vesicular Stomatitis in Horses

University of Georgia, *Principal Investigator: Elizabeth Howerth*

Co-PIs: David Stallknecht; P.O.E. Mueller

Years: 1999-2000 TOTAL - \$57,405

Characterization of the Pyrogenic Mitogen of Streptococcus Equi

University of Kentucky, *Principal Investigator: John Timoney*

Co-PIs: Sergey Artiushin; Abhineet Sheoran

Years: 1999-2000 TOTAL - \$57,182

DNA Vaccination Against Rhodococcus Equi Pneumonia

University of Guelph, *Principal Investigator: J.F. Prescott*

Years: 1999-2000 TOTAL- \$65,200

Generation of Protective Immunity to Equine Herpes Viral Infection Using DNA

University of Wisconsin, *Principal Investigator: D. Paul Lunn*

Co-PI: Chris W. Olsen

Years: 1999-2000 TOTAL - \$79,817