



ROOTS AND BLOODLINES RUN DEEP

Growing up on Longfield Farm as the fourth generation to be involved in the horse industry I know how critical the health of the horse is to the bottom line.

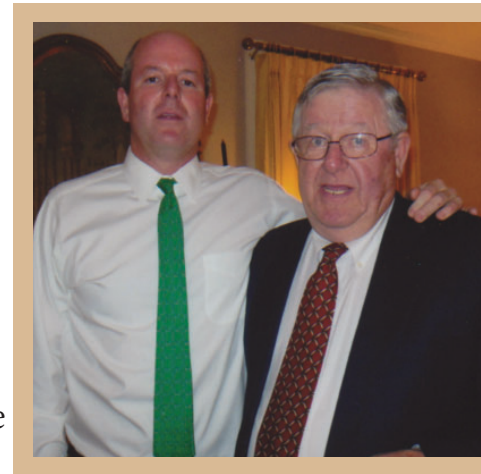


My father was a racetrack veterinarian, past president of the American Association of Equine Practitioners, and a member of The Jockey Club. Dad served as Co-Chairman of the GJCRF Board of Directors for many years and helped establish with Dr. Larry Bramlage, our Research Advisory Committee. My mother served two times on the Kentucky Horse Racing Authority.

My grandfather was a longtime racing official and was racing secretary at Churchill Downs, Keeneland and Oaklawn Park. Being a passionate advocate for the horse and an integral part to the industry has been engrained in me from early on.

I have served on the Grayson-Jockey Club Research Foundation board since 2010. And served on the boards of other industry organizations, including, The Thoroughbred Club of America, Kentucky Derby Museum, Thoroughbred Owners and Breeders Association, and the Backside Learning Center. I can tell you in full confidence that Grayson is the best thing we can support in this business. It is the improvement of the health and welfare of the horse that is our sole focus.

As a partner in Sterling Thompson Company as the senior equine risk advisor, I see the critical need for my clients to have the care their horses need from our veterinarians when they need it most. Without the Grayson Foundation half of what we now know about equine injury prevention on the track, reproductive issues in our mares like placentitis and EPL, and those viruses like rhodococcus equi and rotavirus that affect our young foals would not have been discovered.



Grayson is the best way I know to give back to the horses that give us their all. In the past year we have funded the list of research projects some of which are featured in this newsletter. We could not have gotten this done without supporters like you. Thank you for all you have done in the past. I am hoping you will continue to help us fund more important research.

Sincerely,

Kevin Lavin
Board Chair





Project Update-

A NOVEL DNA VACCINE PLATFORM TO CONTROL EHV-1 AND EHV-4

Bettina Wagner, DVM, PhD (*Principal Investigator*)
and Diego Diel, DVM, PhD (*Co-Principal Investigator*)

CORNELL UNIVERSITY

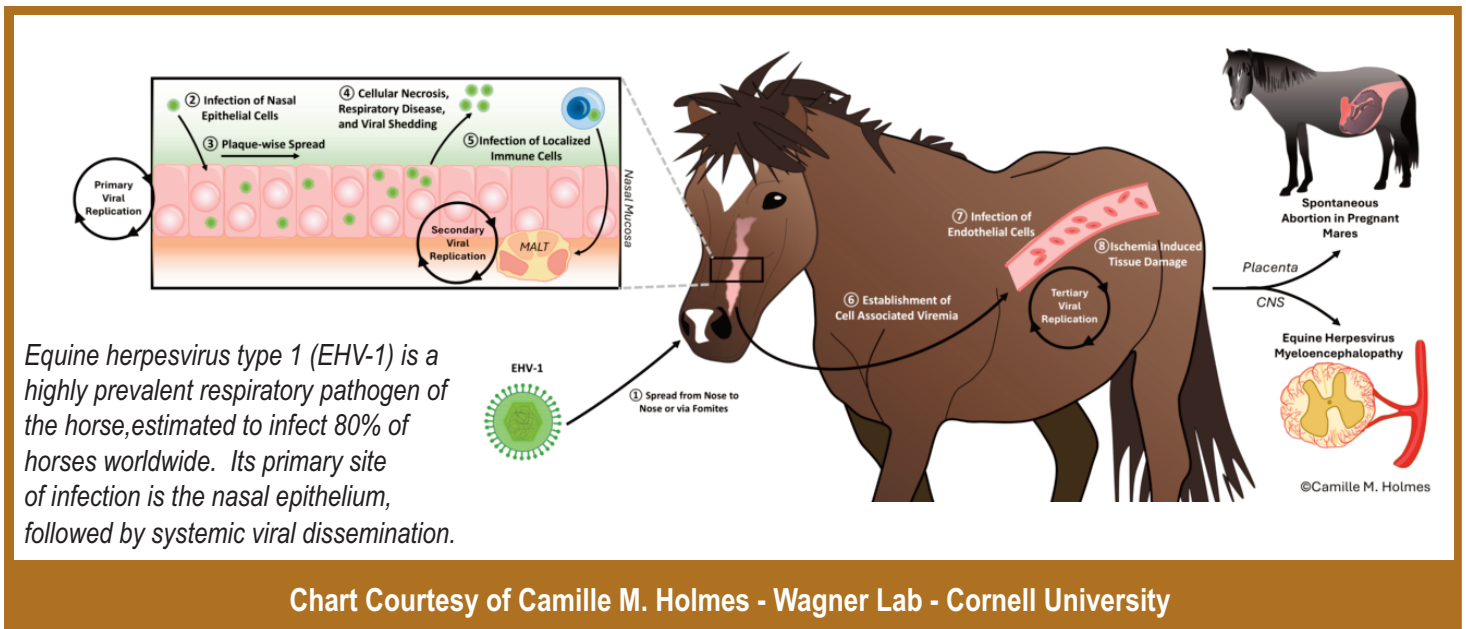
Equine herpesvirus type-1 (EHV-1) and EHV-4 cause respiratory disease in horses and both viruses can initiate abortions in pregnant mares. EHV-1 also causes neurologic disease, known as equine herpesvirus myeloencephalopathy (EHM). EHM outbreaks continue throughout the United States despite several available EHV vaccines. The medical and economic impact of EHV-1 and EHM outbreaks on the equine industry is substantial through lost training and competing time, costs related to quarantine, treatment, and loss of horses due to death of severely neurologic. Existing EHV-1 vaccines do not induce a strong memory response, and therefore require regular boosters to supplement their effects. In addition, there is not an adequate vaccine available for young horses to protect them from the virus early in life.

The Wagner lab uses the naive Icelandic horse model to develop a vaccine that induces longer lasting immune memory, and provide protection in younger foals. In this project, we aim to develop a novel DNA vaccine to improve protection from disease and losses caused by EHV-1 and EHV-4.

During the first year the project, we identified the most promising viral target structures for DNA vaccine development. EHV-1 and EHV-4 carry several viral proteins on their outer membrane. These viral proteins are essential for the virus to bind to and enter equine host cells. However, due to their location at the outside of the virus, several of them also provoke high immune responses. To find the best viral targets for the EHV-1/4 DNA vaccine targets, we produced all viral proteins in the laboratory and then, used



The Wagner lab is using naive Icelandic horses to test and develop a vaccine for EHV-1 and EHV-4.



serum samples from 40 different horses that were immune and protected against EHV infection. We have previously shown that serum antibodies made by immune horses represent ‘correlates of protection’. In this project, we used sera from protected horses to identify antibodies against the corresponding viral proteins. This resulted in the identification of four viral target proteins, three of which were identical for EHV-1 and EHV-4 that were used to develop the novel DNA vaccine.

We focused on these three viral targets in year 2 of the project for constructing the DNA vaccine. We are using a linear DNA vaccine procedure. The different linear DNAs for EHV-1/4 proteins were then packaged into an immunogenic carrier system. Several in vitro tests and quality control steps were performed in our laboratories in year 2 to prepare the vaccination trial with the novel EHV-1/4 DNA vaccine in horses.



The linear DNA vaccine candidate is currently tested to determine the optimal dose of the vaccine. In year 3 of the project, we will perform the vaccination study with EHV-1 challenge to test immunity and protection induced by novel EHV-1/4 DNA vaccine. Protection from disease, viral shedding, viremia and the induction of local and systemic immunity will be analyzed during the vaccination trial in vaccinated horses and controls.

The goal of our project is to provide proof-of-principle for a novel DNA vaccine for protecting horses from EHV-1 and EHV-4 infection and for preventing against EHM.





Grayson-Jockey Club Research Foundation

Please visit us at the following events in 2025:



SPLIT ROCK HUNTER JUMPER 1 CSI 2*
June 4-8, 10-15 • Kentucky Horse Park, Lexington, KY



LEXINGTON JUNIOR LEAGUE CHARITY HORSE SHOW
July 7-12- 14 • Kentucky Horse Park, Lexington, KY



ROOD & RIDDLE HATS OFF DAY
July 26 • Kentucky Horse Park, Lexington, KY



USEF PONY FINALS
August 5 – 10 • Kentucky Horse Park, Lexington, KY



NATIONAL SNAFFLE BIT ASSOCIATION WORLD CHAMPIONSHIP SHOW & BREEDERS CHAMPIONSHIP FUTURITY
August 7- 17 • Tulsa, OK



UNITED STATES HUNTER JUMPER ASSOCIATION, GREEN HUNTER INCENTIVE NATIONAL CHAMPIONSHIPS
August 12- 17 • Kentucky Horse Park, Lexington, KY



AMERICAN EVENTING CHAMPIONSHIPS
August 26 – 31 • Galway Downs, Temecula, CA



UNITED STATES HUNTER JUMPER ASSOCIATION, YOUNG JUMPER CHAMPIONSHIPS
September 2 – 7 • Traverse City, MI



THOROUGHBRED INCENTIVE CHAMPIONSHIPS
October 4 – 6 • Aiken, SC



RETIRED RACEHORSE PROJECT
October 8 – 11 • Kentucky Horse Park, Lexington, KY



ALL AMERICAN QUARTER HORSE CONGRESS
September 27 - October 26 • Columbus, OH



NATIONAL HORSE SHOW
October 23 - November 3 • Kentucky Horse Park, Lexington, KY



US Dressage Finals

UNITED STATES DRESSAGE FEDERATION DRESSAGE FINALS
November 6 - 10 • Kentucky Horse Park, Lexington, KY



USHJA NATIONAL CHAMPIONSHIPS
November Las Vegas, NV



SPLIT ROCK CSI5*
November 19-23, Santa Anita



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